ecology and environment, inc.
160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL. 415/777-2811
International Specialists in the Environment

MEMORANDUM

Elisa -
I have file
Please enter this
into Cercl's
anyway

TO: Paul La Courreye, EPA

FROM: Patty Cook, E & E, Inc.

DATE: September 7, 1988

SUBJECT: Completed Work

cc: Marcia Brooks, E & E, Inc.

This list is for the attached completed:

RFA and
SI 1
Complete
9/22/88

- [ ] PA(s)
- [ ] PA Review(s)
- [ ] PA Reassessment(s)
- [ ] SI(s)
- [X] Other: RCRA Facility Assessment

Site Name	EPA I.D.#	City	Recommendation	State Lead
Rho-Chem Corporation	CAD008364432	Inglewood	CERCLA: LSI RCRA: RFI	DOHS

EVT → A, SI1, — F, S, 090188

EVT → A, ZC1, RCRA Facility Assessment 3936

jr/ss/rho/cwm

0762

PA/SI

Purpose: RCRA Facility Assessment

Site: Rho-Chem Corporation
425 Isis Avenue
Inglewood, California 90301
Los Angeles County

CERCLIS ID: CAD008364432

TDD#: F9-8804-008

PAN#: FCA0805CAA

Prepared by: Sandra L. Szabat

Report Date: September 6, 1988

FIT Review/Concurrence:

Submitted to: Paul La Courreye
Site Screening Coordinator
EPA, Region IX

ecology and environment, inc.
160 SPEAR STREET, SAN FRANCISCO, CALIFORNIA 94105, TEL 415/777-2811
International Specialists in the Environment

TABLE OF CONTENTS

TABLE OF CONTENTS (cont.)

TABLE OF CONTENTS (cont.)

FIGURES AND TABLES

FIGURES AND TABLES

1. INTRODUCTION

On November 13, 1987, the Environmental Protection Agency (EPA) revised procedures for planning and implementing off-site response actions. This policy, "Revised Procedures for Planning and Implementing Off-site Response Actions," amends the original off-site policy issued in May 1985, and incorporates changes required under Section 121(d)(3) of the Superfund Amendments and Reauthorization Act (SARA) of 1986. The purpose of the off-site policy is to prevent CERCLA wastes from contributing to present or future environmental problems by directing these wastes to treatment facilities determined to environmentally sound. These determinations, in part, will be made by conducting RCRA Facility Assessments (RFAs) at those RCRA-regulated sites which currently, or may in the future, accept CERCLA wastes. Additional information is necessary to determine if this facility is eligible for inclusion on the National Priorities List (NPL) under CERCLA. Rho-Chem Corporation has been identified by the EPA as a facility requiring an RFA to determine if the facility is environmentally sound and therefore eligible to accept CERCLA wastes in the future. The EPA requested that Ecology and Environment, Inc.'s Field Investigation Team (FIT) conduct this RFA and make a recommendation regarding the site's eligibility to accept CERCLA wastes.

For the purposes of evaluating a facility's acceptability under the off-site policy, the RFA consists of two stages. The first stage, the Preliminary Review (PR), consists of evaluating existing information to identify and characterize potential releases to the environment from the facility and conducting an off-site drive-by of the facility. This information is used to focus investigative activities to be conducted during the second stage of the RFA, the Visual Site Inspection (VSI), which consists of an on-site visit. The purpose of the VSI is to confirm and supplement information obtained during the PR stage regarding potential or actual releases at the facility and to determine if sampling, interim, or remedial investigation measures are necessary.

This report summarizes information obtained during the PR and VSI regarding releases from the facility and the site's eligibility for NPL listing. Information sources utilized included interviews and/or file searches at the U.S. EPA, California Department of Health Services, California Regional Water Quality Control Board, Los Angeles County Department of Public Works, South Coast Air Quality Management District, City of Inglewood Fire Department, City of Inglewood Building Department, and Los Angeles County Sanitation District, plus a site visit with Rho-Chem Corporation representatives.

2. FACILITY DESCRIPTION

2.1 INTRODUCTION

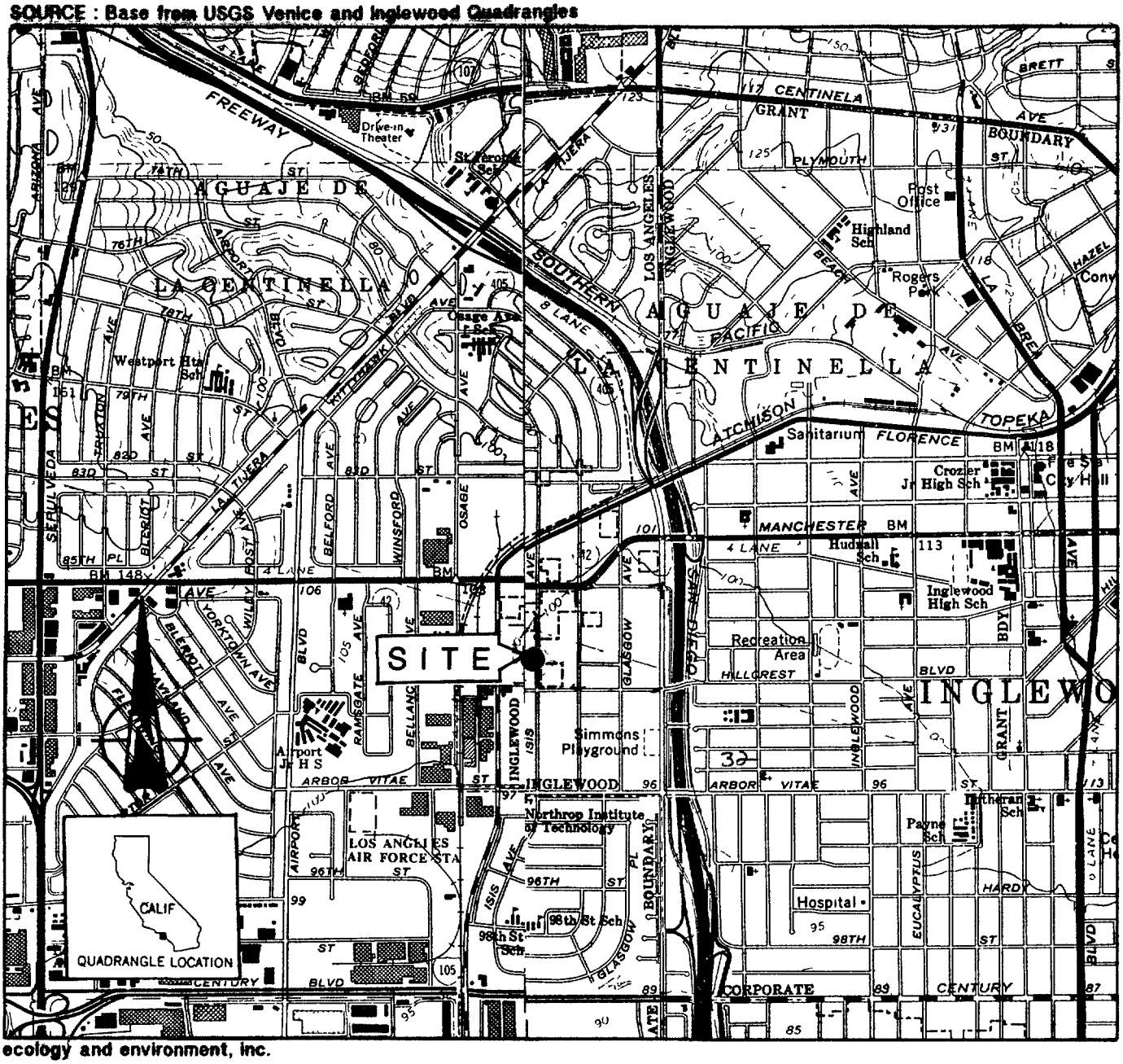
Rho-Chem Corporation (Rho-Chem) is located at 425 Isis Avenue in Inglewood, California (see Figure 1, Site Location Map: T2S, R14W, Section 32). Rho-Chem's principle activities are the sale and distribution of industrial solvents, preparation of ultra-pure reagent grade solvents, and formulation of proprietary solvent blends (1). Rho-Chem has also operated as a waste solvent recycler and a waste transfer facility for halogenated and flammable waste solvents since 1964. Rho-Chem's early recycling activities were limited to halogenated waste solvents; the flammable waste solvents were accumulated on-site and shipped without prior treatment to BKK for disposal (4). During the early 1980s, however, flammable wastes were recycled on-site in a thin film evaporator (1). In 1982, Rho-Chem began blending some flammable waste solvents for use as cement kiln fuel at Systech in Lebec, California. Since 1984 or 1985, virtually all flammable waste solvents received have been consolidated and shipped off-site for incineration (11).

Rho-Chem currently uses the thin film evaporator and a reboiler with a 42-foot high fractionation column for halogenated waste solvent treatment. Recycled solvents are subsequently sold in various cold cleaning formulations and in blends with virgin solvents. The company also accepts, generates, and consolidates solvent residues that are not suitable for recycling or for use as fuel. The latter are shipped in 55-gallon drums to Marine Shale in Louisiana for incineration. These "billable wastes" (Rho-Chem's term for wastes shipped to Systech and Marine Shale) accounted for approximately 22% of Rho-Chem's sales in 1987 (2). Additionally, the company has been registered as a hazardous waste hauler with the California Department of Health Services (DOHS) since September 1980. Rho-Chem currently has several stake-bed trucks for transport of 55-gallon drums of waste solvents and one 3500-gallon vacuum truck for bulk transport (11).

Rho-Chem has been at the Isis Avenue location since June 1953. Several ownership transactions and facility expansions have occurred since that time. Chemical handling methods and waste management practices have also changed numerous times over the life of the facility. Underground storage tanks (USTs) have been used at Rho-Chem since the mid-1950s (see Figures 2, 3, and 5 for tank locations). By 1967, at least 44 USTs were on-site. Materials contained in the USTs have included virgin solvents, gasoline, diesel, sludge oil, waste solvents, and still bottoms (3, 4, 5). Rho-Chem has also used above-ground tanks (AGTs) for storage of virgin and recycled solvents, as well as for storage and treatment of waste solvents.

The tanks have been numbered in ascending order. As Rho-Chem expanded and modernized its facility, many USTs, AGTs, and solvent recovery systems were replaced. Rho-Chem refused their corresponding numbers to designate the new components added to the storage and treatment systems.

SOURCE : Base from USGS Venice and Inglewood Quadrangles



ecology and environment, inc.

0 1/2 1 MILE

FIGURE 1
SITE LOCATION MAP
RHO-CHEM CORPORATION
425 ISIS AVENUE
INGLEWOOD, CALIFORNIA

Consequently, the same numbers have been used to designate various above-ground tanks and underground storage tanks on-site at different times over the life of the facility. Throughout this report, Rho-Chem's numerical designations are proceeded by the letters "AGT" or "UST" to differentiate between the two tank types.

Currently there are 47 AGTs and 28 USTs on-site (see Figure 5 for current plant layout). The USTs remaining on-site are either empty or used for virgin solvent storage (see Appendix A). Since 1964, Rho-Chem has operated at least thirteen different versions of solvent recovery systems (see Table 1 and Section 3 for descriptions of individual systems). Numerous process flow changes have also occurred over the life of the facility; several of these are described in Appendix B. Subsequent portions of this section summarize various ownership transactions and known chemical handling and waste management activities at Rho-Chem.

TABLE 1

SOLVENT RECOVERY SYSTEMS AT RHO-CHEM

Name	Dates of Operation*	Types of Waste Solvents Treated	Heat Source
Artisan	3-6 mos., 1964	chlorinated	steam bundle
Steam Injection #1	1965-1970	chlorinated	live steam
Abcolene, version 1	1964-1967	fluorinated	electrical
Abcolene, version 2	1967-1972	fluorinated	electrical
Flash Drum	1970-1972	chlorinated	hot oil tube
Baron-Blakeslee	1972/3-1975	chlorinated	steam bundle
Delta DS-180 #1	1975-1981	chlorinated	steam bundle
Delta DS-180 #2	1978-1981	chlorinated	steam bundle
Steam Injection #2	1981-1985	chlorinated	electric, then live steam
Thin Film Evaporator, version 1	1981-1983	flammable	steam jacket
Thin Film Evaporator, version 2	1983-1985	flammable, then chlorinated	steam jacket
Thin Film Evaporator w/ Suppl. Treatment Tanks	1985-present	1^{o} chlorinated now, some fluorinated	steam jacket
Reboiler/Fractionation Column	1985-present	Fluorinated and water solubles in wash wastewater	steam bundle

*Dates of Operation as approximated by current Rho-Chem personnel

2.2 FACILITY AND PROPERTY OWNERSHIP HISTORY

The firm, founded in 1951 by Mr. Richard O'Meara, was originally known as American Better Chemicals (American). The company initially functioned out of an office as a brokerage for distribution of oils, lubricants and various solvents. The orders were made by telephone and the products were shipped from the original manufacturer to the customer by common carrier. In early 1952, the company rented a warehouse on Hindry Street in Inglewood so products could be stored on-hand for quicker delivery. The company moved to its current location in June 1953 when Richard and Bonnie O'Meara purchased a 90-foot by 231-foot parcel of land on Isis Avenue (see Figure 1, Site Location Map). Several houses on the property were removed and were replaced by a steel building (which remains on-site as the south warehouse). In mid-1961 the O'Mearas purchased the adjacent 75-foot wide strip of property to the north of the original parcel and built additional warehouse and office space. American expanded again in 1967 when it began leasing a 41-foot wide strip of property directly north of the existing facility from Edward and Veda Bennett. Mrs. Bennett remains the current owner of this 231-foot by 41-foot parcel (6, 8).

Near the time waste solvent recycling began in 1964, Mr. O'Meara formed F&C Waste Chemical, essentially a "paper corporation" created for employees to share in profits (7). In 1970, Mrs. Bonnie O'Meara created ABCO Industries and assumed ownership of the solvent recovery systems from American. According to current company management, F&C Waste Chemical, although never profitable, was kept going by Mr. O'Meara until 1972. The distribution of oils and lubricants also ceased in 1972. In February 1974, Bonnie O'Meara purchased the property and Richard O'Meara's stock in American. In July 1974, ABCO Industries merged with American and in August 1974 the name of the company became Rho-Chem Corporation. Bonnie O'Meara remains the principal stockholder of the corporation today (2, 6, 7).

2.3 HISTORICAL CHEMICAL HANDLING AND WASTE MANAGEMENT ACTIVITIES

2.3.1 1951 to 1964

Information regarding chemical handling and waste management activities

from the 1950s through 1964 is limited. File information is incomplete and/or contradictory. Information obtained through interviews with facility representatives supplemented the file information but occasionally differed from those sources.

In the early 1950s, sales of oils and lubricants exceeded solvent sales. These materials were initially received in 55-gallon drums and were shipped out to customers in their original containers (2). Occasionally, solvents were pumped from the drums into a small bulk delivery truck. Solvents remaining in these drums were drained onto soil in the center of the western portion of the property during the 1950s (10). Soil contamination resulting from this disposal practice is discussed further in Sections 3 and 6. The area was probably paved around 1959 (11).

Bulk storage of lubricants and solvents began in the mid-1950s with the installation of six USTs (USTs 17, 18, and 19-22 on Figures 2, 3, and 5). One 5,000-gallon UST and one 2,000-gallon UST were installed in 1956 and four 4,000-gallon USTs were installed in 1957. The 2,000-gallon UST initially contained "sludge oil," while the others initially stored virgin solvents (3, 9, 12). It is not clear from available information what the chemical constituents of the sludge oil were. After the USTs were installed, American began repackaging virgin solvents into one- or five-gallon cans prior to distribution. Bulk and 55-gallon drum deliveries also continued. By 1957, solvent sales had become the company's primary source of revenue (2). To increase the on-site storage capacity, American purchased the adjacent strip of property to the north and installed additional USTs.

By 1962, 32 USTs were on-site (USTs 1-32 on Figures 2 and 3). These tanks were used primarily for storing virgin chemicals, although at least four of those tanks periodically contained wastes (see USTs 13, 14, 19, and 27 in Section 3, Description of Individual Units). The types of virgin chemicals stored in USTs 1-32 have varied over the life of the facility. Appendix A provides a list of the various chemicals contained in the tanks. Various file sources differ regarding the installation dates of these tanks. According to Inglewood Fire Department records, USTs 17 and 18 were installed in 1956, USTs 19-22 in 1957, USTs 1-8 and 23-26 in 1961, and USTs 27-32 in 1962 (12). In 1983, Rho-Chem submitted reports to the State Water Resources Control Board (SWRCB) stating that USTs 1-26 were installed in 1962 (13). During the VSI, Rho-Chem supplied installation dates as follows: USTs 9-22, 1956-1958; USTs 1-8 and 23-26, 1962; and USTs 27-32, 1963 (11).

Information concerning the company's waste handling practices during this time period is quite limited. Current company personnel speculated that "virtually no waste" was generated when oils and lubricants were American's major product line (7). According to Mr. Ernest Roehl (currently president of Rho-Chem), company records dating back to 1961 indicate that waste solvents were shipped to American Potash Company and Deidre Corporation for recycling. These waste solvents probably originated with American's virgin solvent customers and were probably stored in drums on-site prior to shipment (7). Mr. Roehl could not provide any additional details concerning this operation.

2.3.2 1964 to 1981

In 1964 Rho-Chem began recycling halogenated waste solvents, primarily those that were originally shipped to its customers by the solvent distribution side of the business. Six different chlorinated waste solvent recovery systems and two versions of an "Abcolene still" for recovery of fluorinated waste solvents operated on-site at various intervals from 1964 to 1981. All of these systems were located in the north-central portion of the facility (see Figure 3) and were comprised of a number of AGTs and various types of stills (see Table 1 and Section 3). Information concerning the exact arrangements of AGTs and stills for all of these systems could not be obtained from available files or during the VSI. Known configurations of the solvent recovery systems that operated during this time period are shown in Figure 4.

Figure 2 shows the configuration of the facility in the mid-1960s. Fluorinated and chlorinated waste solvents were treated in separate distillation systems. Drums of fluorinated waste solvents (e.g., "Gensolve,"

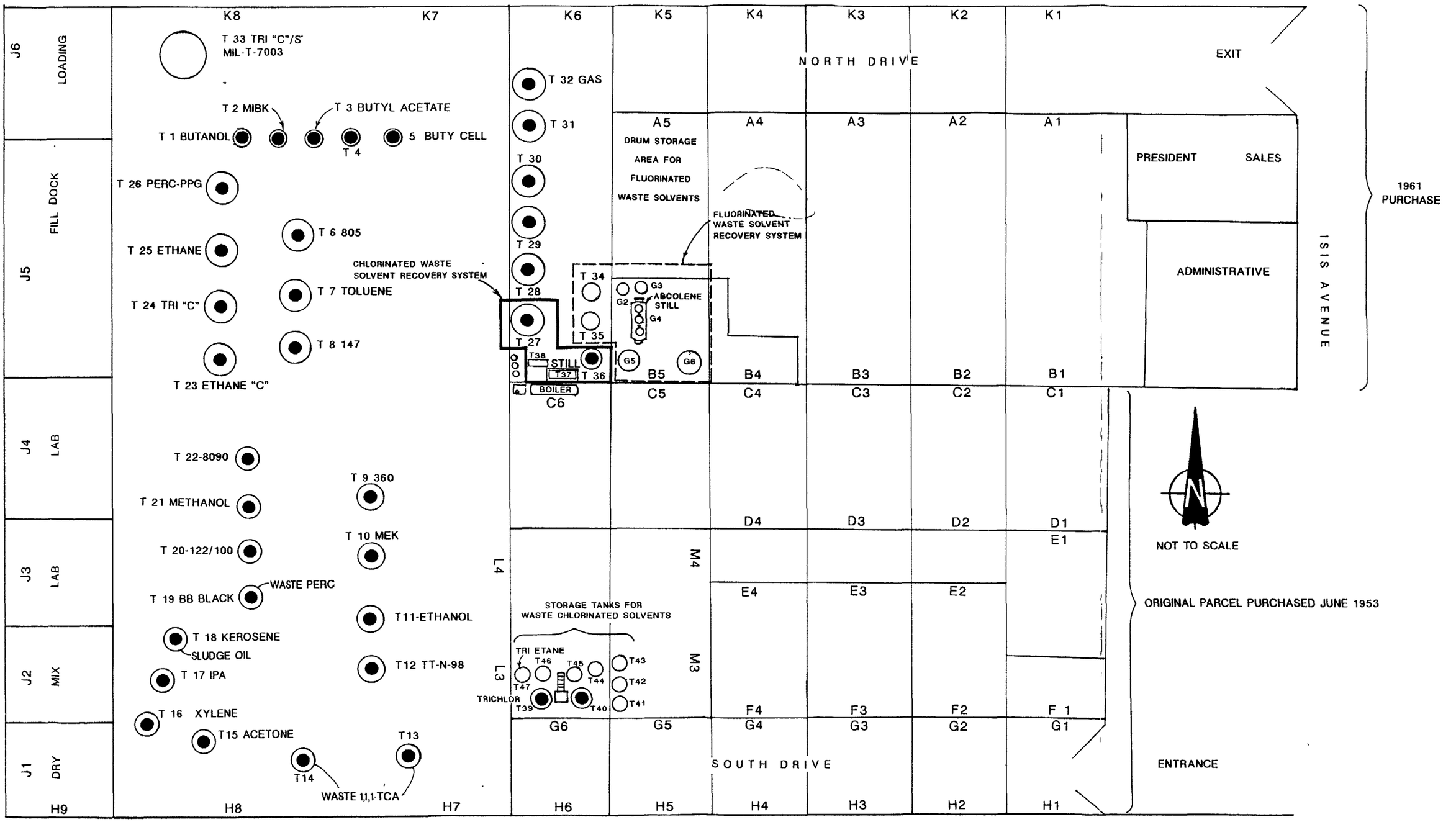
a tradename formerly used for trichlorotrifluoroethane) were stored indoors in the northwest corner of the north warehouse pending treatment in the Abcolene still (G4 on Figure 2). Portable pumps and hoses transferred the wastes into AGT 34 for washing prior to distillation. The Abcolene system was modified substantially in 1967 to increase the treatment capacity (see Section 3). Incoming 55-gallon drums of chlorinated waste solvents were off-loaded in the southwestern portion of the facility and either pumped into USTs 13, 14, and 19 or AGTs 39-47 in the southwestern portion of the site. The Artisan still (T37 on Figure 2), the first on-site solvent recovery system, was a recirculating batch distillation unit that operated during the latter half of 1964. Overhead piping transferred waste chlorinated solvents from the AGTs northward to AGT 36 (the waste feed tank for the still). Portable pumps and hoses transferred wastes from the USTs to AGT 36. According to facility personnel, the Artisan still did not perform as expected, so it was replaced with a steam injection still (also designated as T37 on Figure 2) in early 1965. Waste handling procedures and process flow remained as previously described until the facility expanded again in 1967 (11).

Rho-Chem began leasing a 41-foot wide strip of property to the north of the facility in 1967 to expand its existing operation (see Figure 3). Rho-Chem disposed of AGTs 41-47 (as scrap metal) at this time, but moved AGTs 39 and 40 to the northern portion of the facility and renumbered them as AGTs 45 and 46 (these are denoted as 45′ and 46′ on Figure 3 to avoid confusion with the original AGTs 45 and 46 also shown on that figure). Additionally, Rho-Chem installed UST's 33-44 beneath the newly-leased northeastern portion of the facility (note the reuse of the former AGT numbers). USTs 33-44 stored incoming waste solvents pending treatment (4, 5). Waste chlorinated solvents were pumped from these tanks to USTs 45′ and 46′, which served as the waste feed tanks for the treatment units (11). Steam injection still #1 was used until some time in 1970. Two other chlorinated waste solvent treatment systems, the "flash drum" and the Baron-Blakeslee, operated on-site in the early 1970s. These were followed by the Delta DS-180 stills, which were the chlorinated waste solvent recovery systems described on Rho-Chem's November 1980 Part A application (5, 11).

Rho-Chem submitted its original Part A permit application and Operation Plan to EPA and DOHS in November 1980. According to these documents, waste handling practices were as follows: Rho-Chem usually received waste in 55-gallon drums, although bulk loads of waste solvents were also occasionally accepted. The drums were delivered to the site in Rho-Chem trucks and unloaded onto the paved area along the western portion of the site. Drums were then moved by forklift to the Incoming Drum Storage Area that was located above USTs 33-44 (see Figure 3). Wastes were sampled and characterized by specific gravity and information on the labels. An on-site lab provided additional analysis if necessary (e.g., if the waste was from a generator other than the usual Rho-Chem customers). Drums were then segregated into groups of fluorinated, chlorinated, and non-halogenated solvents. The halogenated solvents were pumped into USTs 33 through 38 and the non-halogenated solvents were pumped into USTs 39 through 44 (4, 5).

The chlorinated waste solvents were treated in two Delta DS-180 solvent recovery stills, located in the north-central portion of the facility (see Figure 3). Still bottoms from these distillation units were pumped to UST 27

SOURCE : Reference 34



NOTE : TANKS 1-32 - USTs
ALL OTHER TANKS - AGTs

Figure 2 RHO-CHEM CORPORATION (AKA AMERICAN BETTER CHEMICALS) PLANT LAYOUT, CIRCA 1964 - 1965

SOURCE References 4 ,5, and

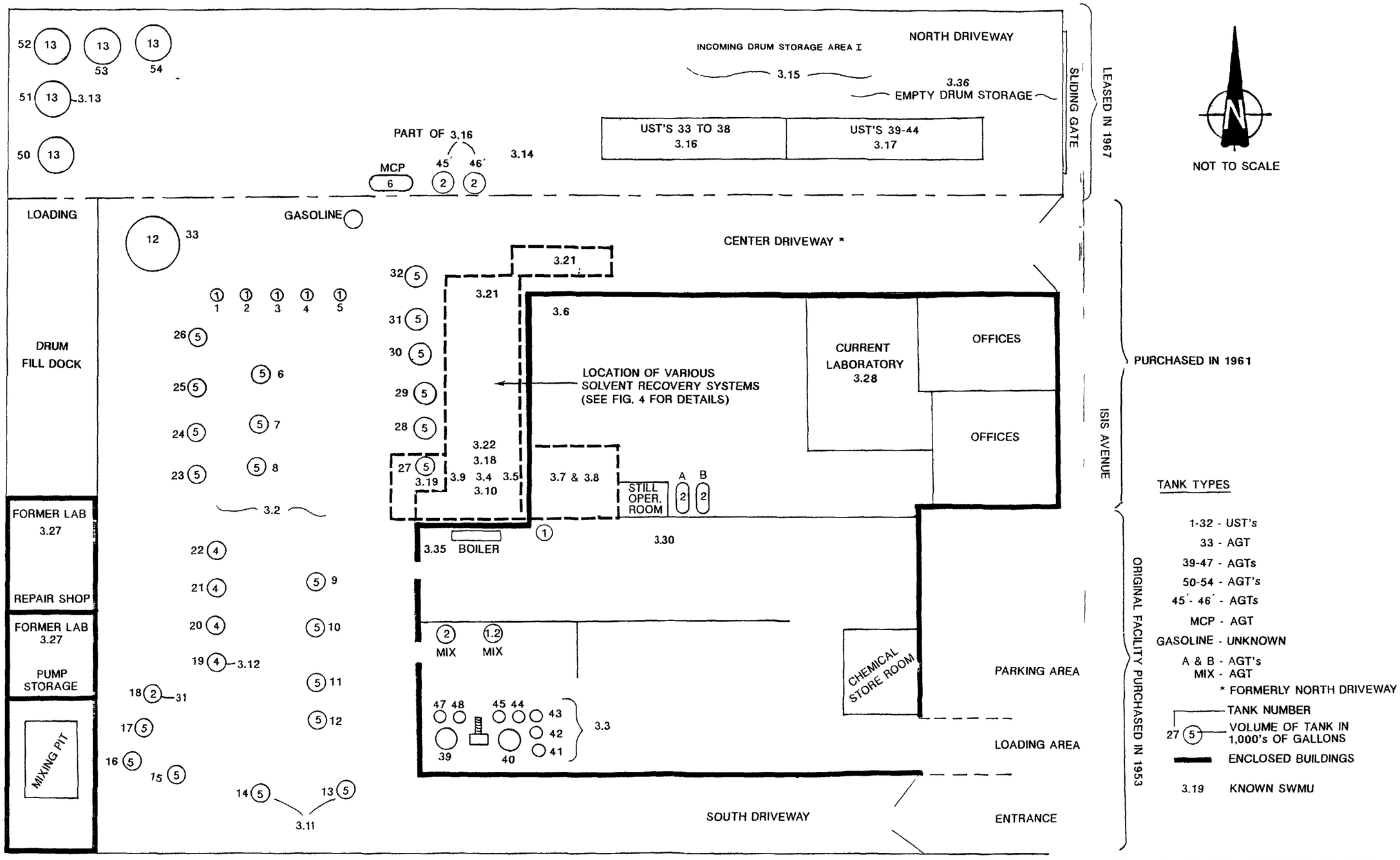
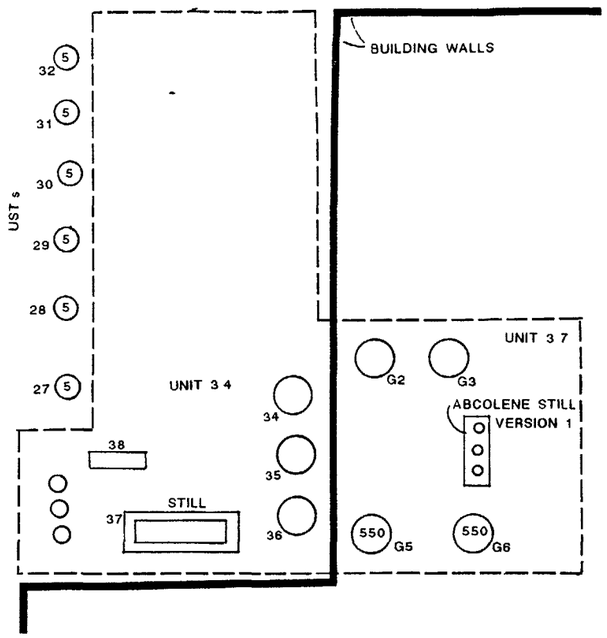
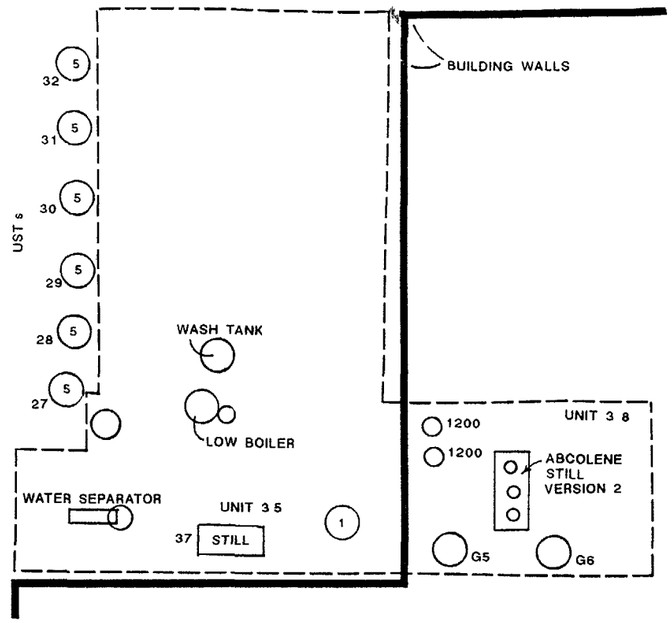


Figure 3 PLANT LAYOUT AND SWMU LOCATIONS, 1964 TO 1981 RHO-CHEM CORPORATION (AKA AMERICAN BETTER CHEMICALS)

A CIRCA 1964

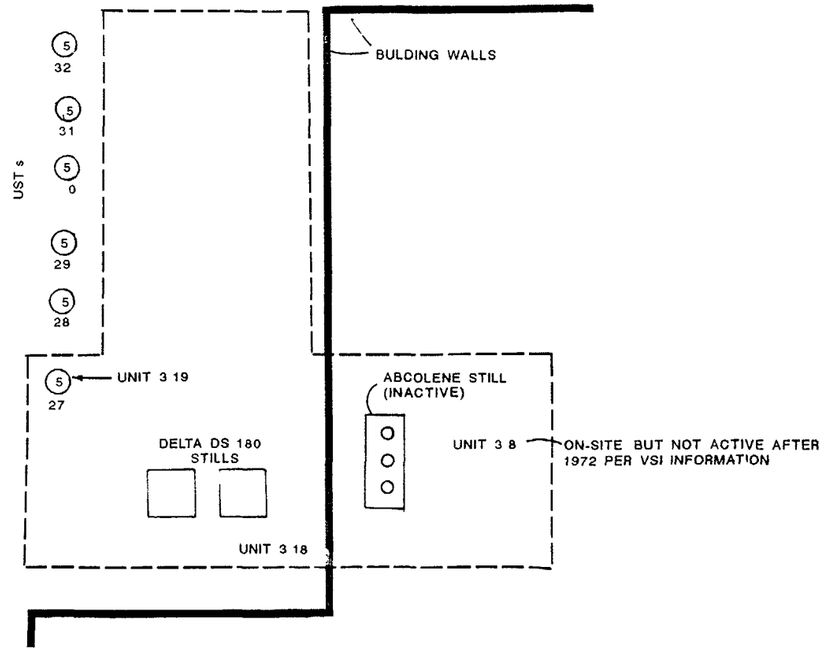


B. CIRCA 1970

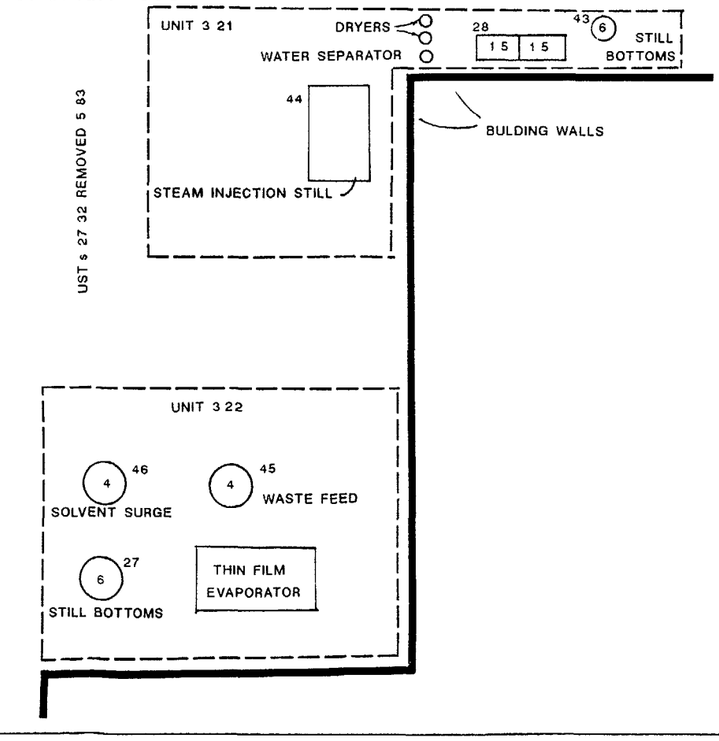


NOT TO SCALE

C. CIRCA 1980



D. CIRCA 1983



UNIT 3 7 - SWMU ACTIVE DURING TIME PERIOD NOTED

45 — TANK NUMBER

4 — VOLUME OF TANK IN 1000's OF GALLONS

Figure 4 KNOWN LAYOUTS OF SOLVENT RECOVERY SYSTEMS AT RHO-CHEM, 1964 TO 1983

pending off-site disposal at BKK. The 1980 Part A application also stated that fluorinated waste solvents were treated on-site (5). However, during the VSI, Rho-Chem representatives stated that the Abcolene still had not been used since 1972 and that from 1972 to 1985 fluorinated wastes were accumulated on-site and shipped to Romic in Palo Alto for treatment. They had included the information pertaining to the fluorinated solvent recovery still on the Part A in case they decided to use that system again (11). Non-halogenated (flammable) solvents accumulated in USTs 39 to 44 were ultimately shipped to BKK Landfill for disposal. Reclaimed solvents were piped to AGTs 50-54 for storage (4, 5, 9). See Appendix B for a summary of these handling methods.

Regarding the AGTs, available file information indicates that AGTs 33 and 50 to 53 (see Figures 2 and 3) were permitted by SCAQMD in 1967. However, exact installation dates are unknown. Though these tanks were used primarily to store virgin and recycled solvents, there is some indication that AGT 51 stored waste solvents (3). Facility personnel were unable to confirm this use of AGT 51 during the VSI, however (11). After leasing the northern-most parcel in 1967, AGT 33 was moved to the northwestern corner of the facility and renumbered as AGT 50 (11).

2.3.3 Late 1981/Early 1982 to 1985

During this time period, Rho-Chem modified the previously described storage and treatment systems on several occasions. Rho-Chem removed the Delta DS-180 chlorinated solvent recovery stills and expanded its treatment capabilities to include flammable waste solvents as well as chlorinated waste solvents. Fluorinated wastes were still being shipped to Romic for treatment (29). Refer to Appendix B for a summary of known waste handling practices followed at this time. At least three different solvent recovery systems operated for various intervals during this time period. The nature of these modifications and their approximate dates are described below.

In late 1981 or early 1982, Rho-Chem installed a thin film evaporator to treat flammable waste solvents and a steam injection still with a 6-foot surge column to treat chlorinated waste solvents. Still bottoms from both systems were initially stored in UST 27. These units were also located in the north-central portion of the facility (see Figure 3). When initially installed, the thin film system consisted of a thin film evaporator, a condenser, and a 1500-gallon surge tank for temporary storage of the recycled solvents. From this surge tank, recycled flammable solvents were pumped to the AGTs in the northwest portion of the facility for storage pending distribution (9).

Also in late 1981 or early 1982, Rho-Chem installed 14 AGTs to store incoming waste solvents, recycled solvents, and virgin solvents. Ten of these tanks were installed just south of USTs 33-44 (see Figures 3 and 5). After the installation of the AGTs, Rho-Chem stopped using USTs 33-44 for storage of incoming waste solvents and reused numbers 33 to 42 to designate the group of ten new storage AGTs. The other four AGTs, numbered 55 to 58, were added to the northwest corner of the site (see Figure 5) for clean solvent storage (1, 9). According to Rho-Chem's 1983 Operation Plan, AGTs 36, 40, and 41 were dedicated to storing mixed flammable waste solvents (aka thinners) and AGTs 37-39 and 42 to chlorinated waste solvents. AGTs 33 to 35 initially stored

recycled and/or virgin solvents (1).

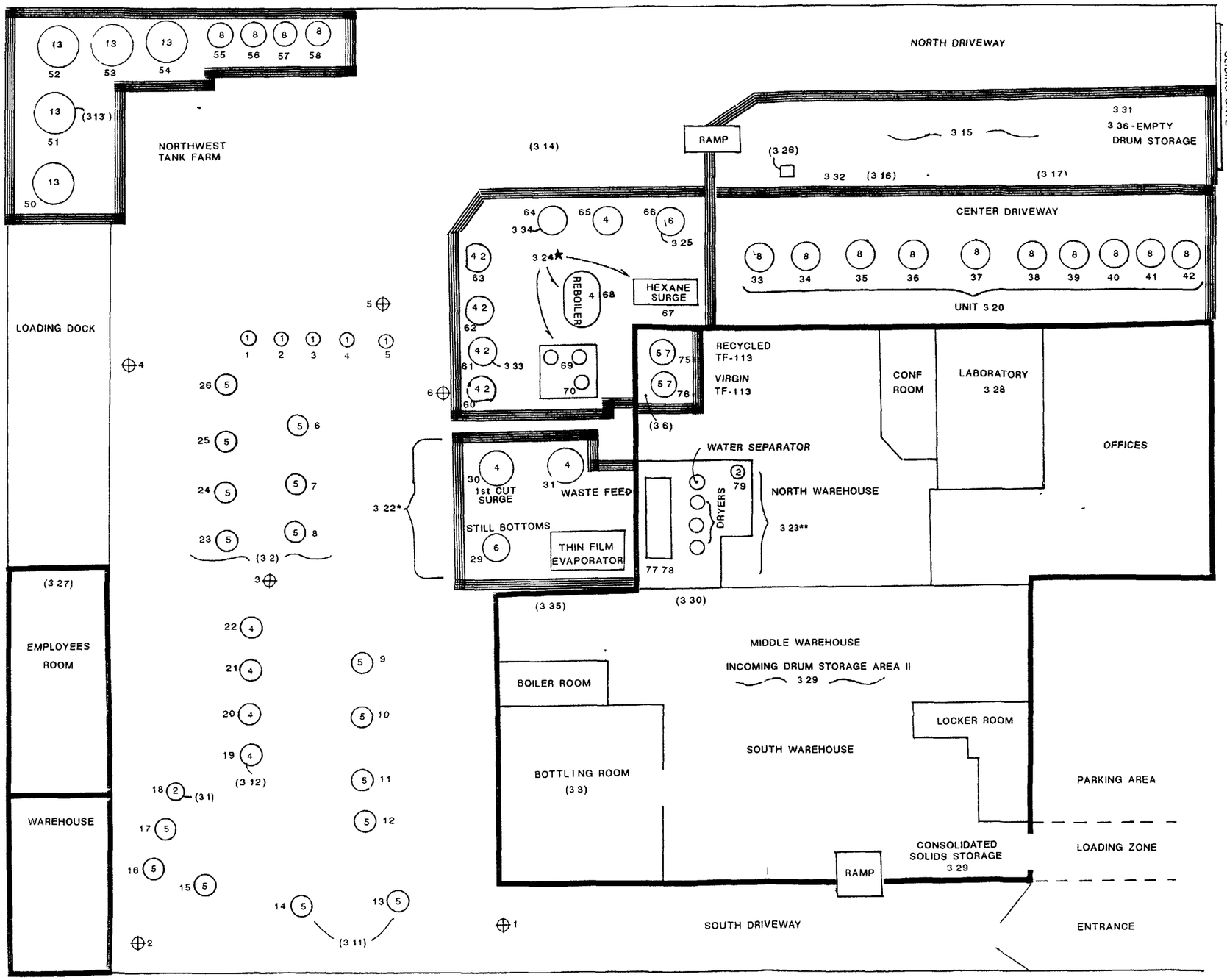
On March 3, 1982, USTs 33-44 were removed from the northeastern portion of the site. The excavation area was backfilled, graded, and paved (14). Based on available file information, it does not appear that soils were sampled subsequent to tank removal. Information pertaining to the condition of the tanks at the time of removal could not be found in the files reviewed. Facility personnel believed that tank conditions were satisfactory at the time of removal (11).

In 1983, a 4000-gallon waste solvent feed tank (AGT 45 when installed, currently AGT 31) and a 6000-gallon tank (AGT 27 when installed, currently AGT 66) for still bottom storage were added to the thin film system and the original 1,500-gallon reclaimed solvent surge tank was replaced by a 4,000-gallon tank (AGT 46 when installed, currently AGT 30). Also as of May 1983, the steam injection still system consisted of a still (AGT 44 when installed, not now on-site) with a 6-foot surge column and condenser, a water separator (unnumbered), two dryers (unnumbered), two recycled solvent surge tanks (AGT 28 when installed, not now on-site) and a still bottoms tank (AGT 43 when installed, currently AGT 29). The configurations and numerical designations, as of May 1983, are shown Figure 4D. Still bottoms were subsequently sent to Systech (in Lebec, California) for incineration in a cement kiln. All components of these systems were installed above-ground (1, 9, 16, 60). These versions of the thin film evaporator and steam injection still #2 were described in Rho-Chem's 1983 Operation Plan, which DOHS approved as part of the facility's hazardous waste permit.

In May 1983, USTs 27-32 were removed from beneath the western portion of the facility (15). UST 27 had been used to store still bottoms from the chlorinated and flammable solvent recovery systems described above. USTs 31 and 32 had contained diesel and gasoline, respectively. The others had been used for storing virgin chemicals (see Appendix B). Based on available file information, it does not appear that soil samples were collected subsequent to tank removal. However, the contractor who removed the six tanks reported that four of them (USTs 27-30) were in seriously corroded condition (17) (see Section 5.1). Two replacement USTs for diesel and gasoline were installed in May 1983 (13).

2.3.4 Late 1985 to mid-1988

In late 1985 or early 1986 Rho-Chem modified its waste treatment equipment and implemented changes in waste handling procedures. Rho-Chem added supplemental treatment tanks to the thin film evaporator, removed the live steam lines from the steam injection still and converted it to a steam-heated reboiler, attached a 42-foot high fractionation column to the reboiler, and installed additional tanks (AGTs 60-65) to collect the distillate from the column. Several existing tanks were renumbered as well (see Figure 5). Subsequent to these alterations, Rho-Chem began treating fluorinated waste solvents again and began operating the solvent recovery systems in series rather than in parallel. A waste process flow diagram showing these changes was submitted to SCAQMD in 1985 and to DOHS in 1986 and is included in Appendix B. During the first half of 1988, the facility treated an average of 5000-7000 gallons per month of waste TF and 43,000 gallons per month of chlorinated waste solvents (20).



NOT TO SCALE

TANK TYPES

1-26 - UST's

ALL OTHER TANKS SHOWN - AGTS

NOTE UST s 27 AND 28 NOT SHOWN ARE BENEATH AGTs 60-63

33 — TANK NUMBER

8 — VOLUME OF TANK IN 1 000 s OF GALLONS

3 22 ACTIVE SWMU

(3 1) INACTIVE SWMU

** APPROXIMATE AREA OF INACTIVE UNITS 3 7 AND 3 8

★ APPROXIMATE AREA OF INACTIVE UNIT 3 21

* APPROXIMATE AREA OF INACTIVE UNITS 3 4 3 5 3 9 3 10 3 18 AND 3 22

BERMED AREA

ENCLOSED BUILDINGS

APPROXIMATE LOCATION OF SOIL BORING

NOTE BORING 6 IS IN VICINITY OF FORMER USTs 27-32 UST 27 IS UNIT 3 19 ON FIGURES 3 AND 4

Figure 5
1988 PLANT LAYOUT WITH SWMUs
AND 1985 SOIL BORING LOCATIONS

In the modified waste process flow, all recyclable halogenated waste solvents were initially treated in the thin film evaporator (previously used to treat flammable waste solvents only) (1, 18, 19). According to facility personnel, the fluorinated waste solvent consists of a mixture of trichlorotrifluoroethane (TF), water soluble solvents (e.g., alcohols), 1,1,1-trichloroethane (1,1,1-TCA); chlorinated waste solvents can consist of one or more of the following: 1,1,1-TCA, methylene chloride, tetrachloroethylene (perc), and water soluble solvents. Varying amounts of water, oil, grease, and dirt are also present in these wastes (11, 19).

Treatment in the thin film separates the halogenated solvents from the heavier oil, grease, and particulate constituents of the waste solvent mixtures typically received by Rho-Chem. The resulting condensate or "first cut" contains a mixture of the halogenated and water soluble solvents. Additional treatment of the condensate occurs in the reboiler and/or the supplemental treatment tanks, depending on the type of waste solvent (11, 18, 19).

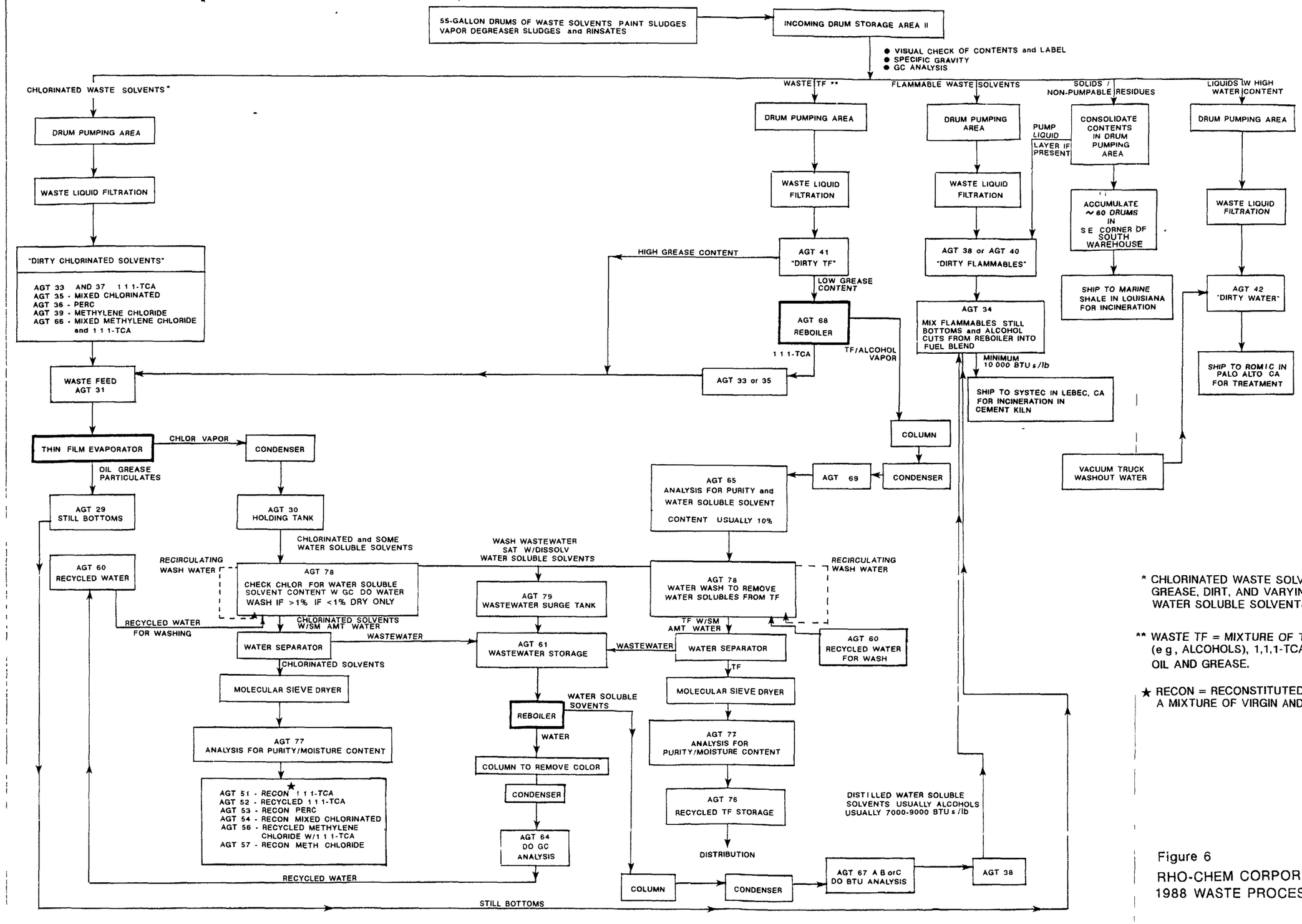
The chlorinated solvent condensate undergoes further treatment because it contains water and/or water soluble solvents (e.g., alcohols). The additional treatment occurs in the supplemental treatment tanks and consists of washing the condensate with water (to remove water soluble solvents) and/or passing the condensate through a water separator and molecular sieve dryer prior to its being deemed suitable for sale (11, 20).

The reboiler and fractionation column were reportedly used in the following ways: to treat fluorinated solvent condensates (actually mixtures of TF, water soluble solvents, and 1,1,1-TCA) to remove the 1,1,1-TCA prior to water washing; to treat wash wastewater saturated with dissolved water soluble solvents; and to separate solvent-water azeotropic mixtures via the addition of hexane (9, 18, 19). However, according to Rho-Chem personnel, the latter practice proved to be too time-consuming to be cost effective (11).

According to information submitted by Rho-Chem to SCAQMD in September 1985, waste storage at that time was as follows: AGT 34 stored wash wastewater; AGT 35, waste TF; AGT 36, waste thinner; AGTs 37-39 and 42, waste chlorinated solvents; and AGT 40, non-recyclable waste (note that this scheme differs from that described in Rho-Chem's 1983 Operation Plan). The storage scheme for the various fractions distilled off the column was reported to be as follows: AGT 60, alcohols; AGT 61, ketones; AGT 62, chlorinated hydrocarbons stripped from wash water; AGT 63, TF; AGT 64, high boiling hydrocarbons (mostly aromatics); and AGT 65, non-water soluble thinners (9, 19).

During the VSI and several subsequent phone conversations, Rho-Chem personnel described waste handling methods that are markedly different than those submitted to SCAQMD and DOHS (refer to Appendix B). For example, wash wastewater is currently stored in AGT 61, not AGT 34. Also, Rho-Chem personnel have found that waste TF does not usually have a high oil and grease content, so since early 1988 waste TF has been fed directly into the reboiler instead of initially treated in the thin film evaporator (20). The current process flow, based on information acquired during the VSI and in subsequent phone conversations, is shown in Figure 6. Current treatment process flows are discussed in more detail in Section 3, Description of Individual Units.

SOURCE References 11, 20, and 2



* CHLORINATED WASTE SOLVENTS ALSO CONTAIN OIL, GREASE, DIRT, AND VARYING AMOUNTS OF WATER SOLUBLE SOLVENTS

** WASTE TF = MIXTURE OF TF, WATER SOLUBLE SOLVENTS (e g , ALCOHOLS), 1,1,1-TCA, AND VARYING AMOUNTS OF OIL AND GREASE.

★ RECON = RECONSTITUTED SOLVENT, A MIXTURE OF VIRGIN AND RECYCLED SOLVENTS

Figure 6
RHO-CHEM CORPORATION
1988 WASTE PROCESS FLOW DIAGRAM

2.4 REGULATORY INVOLVEMENT

Several agencies regulate the chemical handling and waste management activities at Rho-Chem. All virgin and waste solvent storage AGTs and the two solvent recovery systems are permitted by SCAQMD. The Los Angeles County Sanitation District regulates Rho-Chem's wastewater discharges (cooling tower blowdown and boiler blowdown) to the sanitary sewer system under Permit #9083. According to that agency's files, Rho-Chem's wastewater discharge does not include process water generated from solvent recovery activities. The Inglewood Fire Department oversees the local hazardous materials ordinance and enforces the Uniform Fire Code by conducting periodic fire safety inspections at Rho-Chem.

Underground storage of hazardous materials is regulated under Permit #1542 by the Los Angeles County Department of Public Works. Rho-Chem was also required to submit "Hazardous Substance Storage Statements" for underground storage of hazardous substances to the State Water Resources Control Board. The Los Angeles Regional Water Quality Control Board has overseen a portion of the UST leak detection program implemented by Rho-Chem in 1985 (see Section 6.1). That program is now under the jurisdiction of the Public Works Department. Since December 30, 1983, hazardous waste receiving, storing and treating activities at Rho-Chem have been regulated under Permit #CAD 008364432 by the California DOHS. The permit expires on December 30, 1988. Rho-Chem submitted a revised Part A application and a new Operation Plan to DOHS in February 1988 as part of the permit renewal process. Major modifications have been proposed by Rho-Chem and include receiving and treating entirely different types of hazardous wastes in addition to continuing the solvent recovery operations. According to the proposed Operation Plan and a recent SCAQMD inspection report, the changes proposed include the following (8, 21):

- addition of 7 AGTs to the northwest tank farm for storage of reclaimed solvents;
- addition of 17 AGTs to former Incoming Drum Storage Area I (in the northeastern portion of the facility) for storage of incoming wastes;
- addition of a second thin film evaporator solvent recovery system;
- addition of heavy-metal containing wastes, acidic wastes, and cyanide-containing waste to the list of waste types that can be accepted for treatment and/or storage;
- removal of the 28 USTs currently on-site; and
- relocation of the solvent distribution business to the 18,000 block of Santa Fe in Long Beach;

The proposed Operation Plan is currently under review at DOHS.

3. DESCRIPTIONS OF INDIVIDUAL SOLID WASTE MANAGEMENT UNITS

In order to evaluate on-site sources of releases to air, surface water, groundwater, soil, and the subsurface, distinct solid waste management units (SWMUs) have been identified. A SWMU is defined as any discernible waste management unit at a RCRA facility from which hazardous constituents might migrate, irrespective of whether the unit was intended for the management of solid and/or hazardous waste. Areas contaminated by "routine, deliberate, and systematic discharges" from process areas are also considered SWMUs. However, production areas and product storage areas, or accidental spills from such areas, are not considered as SWMUs (6).

Rho-Chem has operated at least ten different above-ground solvent recovery systems on-site since it began recycling solvents in 1964. Rho-Chem has used at least 16 USTs to store waste solvents and at least 25 AGTs to store or treat waste solvents. Thirteen of the 16 USTs known to have stored waste solvents have been removed (12 in 1982, one in 1983) The other three remain on-site but are no longer used to store wastes. Currently all waste storage and treatment units and their associated piping are above ground.

During the Preliminary Review, 29 units were identified as SWMUs. Seven additional SWMUs were identified during the VSI. They are listed below in Table 3-1 and described individually in the following pages. Unit descriptions include: startup/closure dates, wastes managed, release controls, history of releases, and conclusions regarding the potential for soil/groundwater, surface water, air, and subsurface releases. SWMU locations are shown in Figures 3 and 5.

Three additional areas of concern were identified during during the course of the RFA: a sump in the bermed northwest tank farm area, a sump in the vicinity of AGTs 60-65, and the rear yard/fill dock area located in the western portion of the facility. These areas are described below.

The northwest tank farm is comprised of AGTs 50-58 and is located in a bermed area in the northwest corner of the facility (see Figure 5). These AGTs are used for storage of recycled chlorinated solvents, reconstituted chlorinated solvents (mixtures of recycled and virgin solvents), and virgin chlorinated solvents (see Appendix B for list of individual tank contents). The area has been bermed since 1981 or 1982. During the VSI, FIT observed a concrete sump in the southeast corner of the bermed area. The interior of the sump appeared darkly stained and contained debris (paper, dirt, etc.). Facility personnel estimated that the sump is 2 feet by 2 feet by 1 foot deep. The sump was installed to collect rainwater and accidental product spills; however, no such spills have been documented by the facility (11).

During the VSI, FIT observed liquid in the sump in the vicinity of AGTs 60-65. Mr. Chet Early (Rho-Chem plant manager) stirred up the contents of the sump and FIT staff detected a solvent-like odor. Additionally, the photo-ionization detector registered a reading of one part per million (ppm). Facility personnel estimated that the sump is 8 inches by

18 inches by 8 inches deep. The exact nature of the liquid in the sump is unknown (11).

The rear yard is concrete-paved and has been the main area on which incoming trucks with waste solvent and outgoing trucks with virgin or recycled solvents pass over (Note: USTs 1-28 are beneath this portion of the facility). During the VSI, numerous cracks were noted in the concrete (see photographs in Appendix D). Access to the rear yard is via the north or south driveways, which are sloped to drain surface runoff to the street. The fill dock is located in the northwestern portion of rear yard, near the north driveway (see Figures 3 and 5). At this portion of the facility, recycled and virgin solvents are pumped from the bulk storage tanks to either bulk delivery trucks or to 55-gallon drums that are subsequently loaded onto stake-bed trucks (11). The rear yard has been identified as an area of concern because of the potential for solvent spills and/or yard runoff with entrained solvents to flow through the cracks in the concrete or to flow down the north or south driveways onto Isis Avenue. During the FIT drive-by, a Rho-Chem employee was observed hosing down the north and south driveways from west to east, e.g., from the rear yard to Isis Avenue (see photographs in Appendix D). The yard washdown flowed into the street gutter and curbside catch basin (39). The storm drain beneath Isis Avenue conveys surface runoff to Dominguez Channel, approximately three miles southeast of the site. The channel ultimately drains into San Pedro Bay (59). Therefore, an indirect release of yard runoff (either yard washdown or rainwater with entrained solvents) to surface water appears to be possible.

TABLE 2 SUMMARY OF SWMUs

Unit 3.1 - UST 18-Sludge Oil Tank
Unit 3.2 - Residual Solvent Disposal Area
Unit 3.3 - Former AGTs 39-47 and Chlorinated Waste Solvent Pumping Area
Unit 3.4 - Artisan Still (T37) Solvent Recovery System
Unit 3.5 - Steam Injection Still #1 Solvent Recovery System
Unit 3.6 - Fluorinated Waste Solvent Drum Storage Area
Unit 3.7 - Abcolene Still Solvent Recovery System, Version 1
Unit 3.8 - Abcolene Still Solvent Recovery System, Version 2
Unit 3.9 - Flash Drum Solvent Recovery System
Unit 3.10- Baron-Blakeslee Solvent Recovery System
Unit 3.11- USTs 13 and 14
Unit 3.12- UST 19
Unit 3.13- AGT 51
Unit 3.14- Drummed Waste Unloading Area, 1967-1988 *
Unit 3.15- Incoming Drum Storage Area I/Current Drum Pumping Area *
Unit 3.16- USTs 33-38 *
Unit 3.17- USTs 39-44 *
Unit 3.18- Delta DS-180 Stills Solvent Recovery System
Unit 3.19- UST 27 *
Unit 3.20- AGTs 33-42 *
Unit 3.21- Steam Injection Still #2 Solvent Recovery System
Unit 3.22- Thin Film Evaporator Solvent Recovery System (Versions 1 and 2)
Unit 3.23- Thin Film Evaporator with Supplemental Treatment Tanks
Unit 3.24- Reboiler/Fractionation Column Solvent Recovery System

Unit 3.25- AGT 66, 1985 to Present *
Unit 3.26- Ribbon Mixer/Blender *
Unit 3.27- Former Laboratory
Unit 3.28- Current Laboratory *
Unit 3.29- Incoming Drum Storage Area II/Consolidated Solids Storage Area*
Unit 3.30- Empty Drum Steam-Cleaning Area *
Unit 3.31- Drum Pumping Area Rainwater and Spill Collection Sump *
Unit 3.32- Waste Liquid Filtration and Pumping System *
Unit 3.33- AGT 61 *
Unit 3.34- AGT 64 *
Unit 3.35- Former Yard Sump
Unit 3.36- Empty Used Drum Storage Area

*denotes RCRA-regulated unit

3.1 UST 18-SLUDGE OIL TANK

3.1.1 Information Summary

Unit Description: UST 18, manufactured by Olson Corporation, has a 2,000-gallon capacity. The tank was reportedly manufactured from carbon steel. This UST was identified as a SWMU based on an "underground tank inspection" report found in Inglewood Fire Department files, which stated that this tank would be used for sludge oil (12). However, the exact composition of sludge oil could not be provided by Rho-Chem personnel. Additionally. they were not able to verify that this UST had ever been used to store waste. The tank has also reportedly contained kerosene and gasoline, but is currently empty (11).

Date of Startup: This UST was installed in 1956 and was reportedly to be used for storage of sludge oil after the installation (12).

Date of Closure: This UST remains on-site but is not currently used for waste storage. The length of time during which sludge oil and/or other wastes were stored in this unit could not be provided by current Rho-Chem personnel.

Wastes Managed: Sludge oil is the only waste material reported to have been deposited in this UST, beginning in the mid-1950s (22). During the VSI, however, facility representatives were unable to verify that UST 18 was used for storage of sludge oil during that time.

Release Controls: No release controls for this unit were described in the files reviewed. The tank is unlined and unvaulted (13).

History of Releases: No evidence of releases from this unit were found in the files reviewed or in discussions with current facility personnel.

3.1.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases to soil or groundwater because the tank was new when it was used for sludge oil storage. There is no potential for ongoing releases to soil or groundwater from this unit because the tank is currently empty.

Surface Water Release Potential: There is low potential for past and ongoing releases to surface water because the unit is buried at least four to five feet below ground surface.

Air Release Potential: There is low potential for past and ongoing releases to air because the unit is buried at least four to five feet below ground surface.

Subsurface Gas Release Potential: This unit does not fall under one of the following areas of concern as specified in EPA's RCRA Facility Assessment Guidance: an active or closed landfill or a unit which has been closed as a landfill. Therefore, potential for release is considered low.

3.2 RESIDUAL SOLVENT DISPOSAL AREA

3.2.1 Information Summary

Unit Description: This area is located near the center of the western portion of the facility, south of USTs 8 and 23. According to a long-term employee, this portion of the site was not paved during the 1950s and was used as a disposal area for solvents during that time. After pumping the contents of 55-gallon drums into a small bulk delivery truck, company personnel drained residual solvents from the drums onto the soil in this unpaved area. This disposal practice probably occurred for 5 to 8 years (23). Soil contamination extends to a depth of at least 50 feet beneath this unit (see Section 6.1, Observed Release) (24). The vertical and lateral extent of the contamination is not known at this time.

Date of Startup: The exact date of startup of this unit is unknown, but is believed to be in the mid-1950s.

Date of Closure: The exact date of closure of this unit (e.g., cessation of dumping activities) is unknown, but probably occurred between 1959 and 1962 when the area was covered with concrete (11).

Wastes Managed: Various types of solvents were disposed of in this location. The exact types and amounts are not currently known. However, based on contaminants identified in the soil, it appears that these include tetrachloroethylene, trichloroethylene, 1,1,1-trichloroethane, and xylene (23, 24).

Release Controls: No records of release controls were described in the files reviewed. Apparently, the solvents were allowed to percolate through the soil and evaporate to air.

History of Releases: J.H. Kleinfelder and Associates (Kleinfelder) documented the soil contamination in this area in 1985. Kleinfelder drilled six borings to depths of 50 feet in the western portion of the facility as part of a leak-detection program mandated by RWQCB. Boring #3 was drilled in the area where the residual solvent dumping reportedly occurred. The highest concentration of contaminants--45,000 mg/kg of tetrachloroethylene--was detected at the 5-foot depth in Boring #3. At the 50-foot depth, the highest concentration detected was 49 mg/kg of trichloroethylene (see Appendix C for complete analytical data). The lateral and vertical extent of contamination from this unit is currently unknown.

3.2.2 Conclusions

Soil/Groundwater Release Potential: Release of hydrocarbons to soil has been documented. Although disposing of residual solvents directly onto surface soils ceased 25 to 30 years ago, analytical evidence shows that the solvents have migrated to depths of at least 50 feet.

Surface Water Release Potential: There is low potential for past and ongoing releases to surface water because the area has been covered with concrete paving for nearly 30 years.

Air Release Potential: There is moderate potential for past releases to air because the solvents was poured directly onto the soil and allowed to evaporate and percolate without any release controls. However, the potential for ongoing releases from this unit is considered low because the area has been covered with concrete paving for nearly 30 years.

Subsurface Gas Release Potential: Volatile compounds were disposed of directly onto the soil in this area without provisions for subsurface containment. Subsurface gas releases have been documented in this area because qualitative evidence obtained during Kleinfelder's 1985 drilling investigation indicated that organic vapors were present in the soil. Kleinfelder field personnel used a photo-ionization detector (PID) for qualitative field analysis of organic vapors in discrete soil samples. PID readings indicated high levels of organic vapors in boring #3 (212-950 ppm). Readings in the other five borings ranged from 5 to 840 ppm (25). Additionally, soil analyses identified compounds (such as tetrachloroethylene) that are listed in the RFA Guidance Manual as volatile wastes of concern for subsurface gas releases (26). Kleinfelder completed six borings as vadose zone monitor wells (24). However, according to facility personnel, RWQCB never responded to the monitoring program proposal submitted by Rho-Chem, so the program was never implemented (11). Therefore quantitative evidence of subsurface gas releases is not available at this time.

3.3 FORMER AGTs 39-47 AND CHLORINATED WASTE SOLVENT PUMPING AREA

3.3.1 Information Summary

Unit Description: AGTs 39 and 40 were reportedly 1,600 gallons each. During the VSI, facility personnel described them as a "split tank" and stated that each half had a capacity of 2000 gallons. AGTs 41 through 47 each had 500-gallon capacities. The tanks were located in an open-sided roofed area on concrete paving. Using portable pumps and hoses, chlorinated waste solvents were pumped from 55-gallon drums into the AGTs in this area. The wastes were stored pending treatment in various stills located to the north of this group of tanks. Overhead piping connected the storage tanks to AGT 36, the waste feed tank for several chlorinated solvent recovery stills (Units 3.4 and 3.5) (3,11).

Date of Startup: Facility personnel estimated the startup date to be 1964 or 1965 (11).

Date of Closure: AGTs 41-47 were removed and disposed of in 1967, but AGTs 39 and 40 were relocated to the northern portion of the facility and renumbered as 45 and 46 (shown as 45'and 46' on Figure 3). The were used as feed tanks for the chlorinated solvent recovery systems from 1967 to approximately 1981 (11).

Wastes Managed: These AGTs were used for storage of chlorinated waste solvents pending treatment.

Release Controls: No release controls are described in the files reviewed. Facility personnel stated that the area was not bermed.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.3.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases to soil and groundwater because the tanks were located above-ground and the area was concrete-paved. There is no ongoing potential for releases to soil or groundwater because waste handling activities in this area ceased in 1967.

Surface Water Release Potential: There is low to moderate potential for past releases to surface water because the unit was not bermed. Although the topography of the surrounding area is flat, yard runoff could have entered the storm drain system and released to San Pedro Bay via the Dominguez Channel. There is no ongoing potential for releases to surface water because waste handling activities in this area ceased in 1967.

Air Release Potential: There is low potential for past release to air because the drums were sealed during storage. There is no ongoing potential for releases to air as this unit is no longer in service.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases because the waste transfer and storage activities occurred above-ground on a concrete-paved area. There is no ongoing potential for subsurface gas releases as this unit is no longer active.

3.4 ARTISAN STILL SOLVENT RECOVERY SYSTEM

3.4.1 Information Summary

Unit Description: No information describing an Artisan still was found in the files reviewed. According to facility personnel, the system consisted of a waste solvent feed tank (former AGT 36), the Artisan still, and a water separator (former AGT 38). UST 27 may have been used to store still bottoms generated during the treatment process. The Artisan still was described as a recirculating treatment system and operated as follows: Waste chlorinated solvents were pumped from (former) tanks 39-47 (Unit 3.3) through overhead piping to AGT 36. Waste solvent was continuously circulated between AGT 36 and the Artisan still until only sludge remained in AGT 36. Recovered solvent passed through the water separator. The sludge and wastewater were stored in UST 27. According to facility personnel, the Artisan still was in use for only several months. Apparently, AGTs 36 and 38 remained in use as part of steam injection still solvent recovery system #1 (Unit 3.5); they are described in further detail with that unit (11).

Date of Startup: The exact startup date is unknown. The unit was purchased in May 1964, so the startup date is believed to be in mid-1964 (2).

Date of Closure: The exact closure date is unknown but was probably in December 1964 (2).

Wastes Managed: The unit treated chlorinated waste solvents.

Release Controls: This solvent recovery system was located on an unbermed, concrete-paved area. No other release controls were described by facility personnel (11).

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.4.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases to soil and groundwater from the above-ground components of this unit because the area was concrete-paved. The potential for releases to soil or groundwater from UST 27 during the time it was part of this unit is considered low because that tank had been installed only four years previously. There is no ongoing potential for releases to soil and groundwater because this unit is no longer in service.

Surface Water Release Potential: There is low to moderate potential for past releases to surface water because the unit was not bermed. Although the topography of the surrounding area is flat, yard runoff could have entered the storm drain system and released to San Pedro Bay via the Dominguez Channel. There is no ongoing potential for releases to surface water because this unit is no longer in service.

Air Release Potential: There is low potential for past releases to air because the unit was operated as a closed system. There is no potential for ongoing releases to air because the unit is no longer in service.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases from the above-ground components of this unit because the area was concrete-paved. The potential for subsurface gas releases to have occurred from UST 27 during the time it was part of this unit is considered low because that tank had been installed only four years previously. There is no ongoing potential for subsurface gas releases because this unit is no longer in service.

3.5 STEAM INJECTION STILL #1 SOLVENT RECOVERY SYSTEM

3.5.1 Information Summary

Unit Description: This unit replaced the Artisan still (Unit 3.4) in late 1964 or early 1965. According to facility personnel, the tanks originally in use with the Artisan still were also used with the steam injection still. They also stated that dirty solvent was pumped into the top of the column and that the steam came up from the bottom of the column to strip out the volatiles (11). The configuration of the unit is shown on Figure 4B. This system was regulated under permit #P11660 by the Los Angeles County Air Pollution Control District (Los Angeles County APCD, now part of South Coast Air Quality Management District--SCAQMD). According to the permit, the components of this system were as follows:

- o distillation column, 18 inches in diameter by 16 feet high, with a 550-gallon steam reboiler, T-37;
- o condenser, shell, and tube, 12 inches in diameter by 10 feet high;
- o water separator, T-38, 300 gallons;
- o settling Tank T-37, 5000 gallons (underground);
- o calcium chloride dryer, 55 gallons; and
- o sludge Tank T-36, 1,200 gallons.

This permit designates T-37 as both the reboiler and the underground settling tank. During the VSI, facility personnel stated that they did not know of a UST that was designated as T-37 in that location. They believe the permit could have been referring to UST 27 (9, 11). The other tanks listed on the permit were AGTs.

Date of Startup: The exact date of startup of this unit is unknown, but facility personnel estimated some time in early 1965. Additionally, the Los Angeles County APCD issued a "Permit to Operate" for this unit on December 16, 1965 (9, 11).

Date of Closure: The exact date of closure is unknown. Facility personnel believe that this still may have been used until 1970 (11).

Wastes Managed: The system treated waste chlorinated solvents and the UST stored still bottoms pending off-site disposal.

Release Controls: This solvent recovery system was located on an unbermed, concrete-paved area. No other release controls were described.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.5.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases to soil and groundwater from the above-ground components of this unit because the area was concrete-paved. The potential for releases to have occurred from UST 27 during the time it was part of this unit is considered low because that tank had been installed only four years previously. There is no ongoing potential for releases to soil and groundwater because this unit is no longer in service.

Surface Water Release Potential: There is low to moderate potential for past releases to surface water because the unit was not bermed. Although the topography of the surrounding area is flat, yard runoff could have entered the storm drain system and released to San Pedro Bay via the Dominguez Channel. There is no ongoing potential for releases to surface water because this unit is no longer in service.

Air Release Potential: There is low potential for past releases to air because the unit was operated as a closed system. There is no potential for ongoing releases to air because the unit is no longer in service.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases from the above-ground components of this unit because the area was concrete-paved. The potential for subsurface gas releases to have occurred from UST 27 during the time it was part of this unit is considered low because that tank had been installed only four years previously. There is no ongoing potential for subsurface gas releases because this unit is no longer in service.

Unit 3.6 FLUORINATED WASTE SOLVENT DRUM STORAGE AREA

3.6.1 Information Summary

Unit Description: This unit was identified during the VSI. According to facility personnel, 55-gallon drums of fluorinated waste solvents were off-loaded and stored in the northwestern section of the north warehouse pending treatment in the Abcolene solvent recovery system (Units 3.7 and 3.8); "Abcolene" was Rho-Chem's designation for its recycled fluorinated solvent products. The storage area was not bermed. The capacity of the storage area is unknown. Facility personnel stated that in 1964 they initially offered waste solvent recycling as a service to their virgin solvent customers, so they believed that Rho-Chem handled low volumes of waste (e.g., a few drums) originally (11).

Date of Startup: The exact date of startup is unknown. According to facility records, the Abcolene system was purchased in August 1963 and went on-line in July 1964, so the startup date for this storage area was probably within that time period (7).

Date of Closure: The exact closure date is unknown but probably occurred after the installation of USTs 33-44 in 1967.

Release Controls: The fluorinated waste drum storage area was located on an unbermed, concrete-paved area in the north warehouse (11).

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.6.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases from this unit to soil and groundwater because the storage area was located in a building. There is no ongoing potential for releases to soil or groundwater as this unit is no longer in service.

Surface Water Release Potential: There is low potential for past releases from this unit to surface water because the storage area was located in a building. There is no ongoing potential for releases to surface water as this unit is no longer in service.

Air Release Potential: There is low potential for past releases to air because the drums were sealed during storage. There is no potential for ongoing releases to air because the unit is no longer in service.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases because the waste storage and transfer activities occurred above-ground on a concrete-paved area. There is no ongoing potential for subsurface gas releases as this unit is no longer in service.

3.7 ABCOLENE STILL SOLVENT RECOVERY SYSTEM, VERSION 1

3.7.1 Information Summary

Unit Description: Two versions of the Abcolene still solvent recovery system were in use between 1964 and 1972. They have been designated as separate SWMUs due to equipment modifications and the resulting increase in treatment capacity (version 1 had a 300-gallon reboiler vs. version 2's 1100-gallon reboiler). The Los Angeles County APCD deemed the two systems sufficiently different to require a new permit for version 2.

The original Abcolene still was purchased in August 1963 and began recycling fluorinated solvents (primarily trichlorotrifluoroethane or "TF") in July 1964 (7). "Abcolene" was the company's trade name for its recycled fluorinated solvent products. The Abcolene still and associated AGTs G2, G3, G5, and G6 were located in the southwestern section of the north warehouse; two additional tanks (AGT 34 and AGT 35) were located to the west, outside the building. The configuration of this unit is shown in Figure 4A. The unit was regulated under permit #P11661 by the Los Angeles County APCD (now part of SCAQMD). According to the permit, the components of this unit were as follows (9):

- three distillation columns, 6-inch diameter by 30-foot height each;
- reboiler G-4, 300 gallons, electrically heated;
- three condensers, concentric pipe-type, 6-inch diameter by 2-foot length each;
- process tank G-2, 280 gallons;
- moisture eliminator G-2A, 40 gallons;
- process tank G-3, 280 gallons;
- contaminated solvent tank G-5, 500 gallons;
- product solvent tank G-6, 500 gallons; and
- two membrane filters, 6-inch diameter by 10-inch length each.

All tanks listed on the SCAQMD permit were AGTs. Although the above permit information did not include former AGTs 34 and 35, facility personnel indicated that those tanks were part of the Abcolene treatment system. Additionally, facility personnel stated that tank G5 did not receive contaminated solvent, but received recycled solvent. The following process flow scenario was presented during the VSI: Waste fluorinated solvents (represented as a mixture of TF, water soluble solvents, and 1,1,1-TCA) were pumped from the 55-gallon drums in the storage area (Unit 3.6) to former AGT 34 for a water wash to remove the water soluble solvents (typically alcohols). The washed waste solvents passed through a molecular sieve dryer, into feed tanks G2 and G3, and then into G4, an electrically-heated reboiler. The difference in boiling

points between the solvents caused the lower-boiling TF to distill out of the mixture, pass through the condenser and into the "low boiler" tank (former AGT 35). From this tank, the recovered fluorinated solvent was piped into holding tanks G5 and G6 for storage pending sale. At that time, the recovered product passed through a membrane filter into 55-gallon drums for distribution. The higher-boiling 1,1,1-TCA remained in the reboiler as "still bottoms" and was subsequently treated in the various chlorinated waste solvent recovery systems (11).

Date of Startup: According to facility records, this version of the Abcolene still began operating in July 1964 (7). The Los Angeles County APCD issued a "Permit to Operate" for this unit on December 17, 1965 (9).

Date of Closure: The unit, as described by the Permit to Operate, became inactive around August 1967. The components of this unit were then modified to the extent that the Los Angeles County APCD required a new permit for the revised treatment system (see Unit 3.8) (9).

Wastes Managed: Facility personnel initially stated that the system treated waste fluorinated solvents, but subsequently described a scenario in which mixtures of fluorinated and chlorinated waste solvents were treated. Fluorinated solvents were recovered from this unit, while the chlorinated component of the waste remained behind in the reboiler and was piped to a chlorinated solvent recovery system (e.g., Unit 3.5) for treatment (11).

Release Controls: The Abcolene still (G4) and AGTs G2, G3, G5, and G6 were located inside of the north warehouse on an unbermed, concrete-paved area. AGTs 34 and 35 were located outdoors on an unbermed, concrete-paved area. For air pollution control, the still was equipped with a refrigerator-type condenser powered by a one-horsepower compressor (9). No release controls for the tanks were described in the files reviewed.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.7.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases from this unit to soil and groundwater because all components of this unit were located on a concrete-paved surface and because most components of the unit were located in a building. There is no ongoing potential for releases to soil or groundwater as this unit is no longer in service.

Surface Water Release Potential: There is low potential for past releases to surface water because the topography of the surrounding area is flat and because most of the components of this unit were located in a building. There is no ongoing potential for releases to surface water because this unit is no longer in service.

Air Release Potential: There is low potential for past releases to air because the unit was operated as a closed system and was equipped with a

refrigerator-type condenser. There is no potential for ongoing releases to air because the unit is no longer in service.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the waste storage and transfer activities occurred above-ground on a concrete-paved area.

3.8 ABCOLENE STILL SOLVENT RECOVERY SYSTEM, VERSION 2

3.8.1 Information Summary

Unit Description: In 1967, Rho-Chem modified the original Abcolene solvent recovery system by installing a larger reboiler, by replacing AGTs G2 and G3 with a two-sectioned tank (G2) with 2400 gallons total capacity, and by renumbering the components of the unit. The configuration of this unit is shown on Figure 4B. This system was regulated under Permit #P-21954 by the Los Angeles County APCD (now part of SCAQMD) (9). According to the permit, this version of the unit was comprised of the following:

- o three distillation columns, 6-inch diameter by 36-foot height each;
- o reboiler G-3, 4-inch diameter by 12-foot 8-inch length, 1100 gallons, electrically heated;
- o condensers, concentric pipe-type, 6-inch diameter by 2-foot length;
- o dual tank G-2, two sections, each 3-foot diameter by 12-foot height, each 1200 gallons;
- o dryer, 1-foot 9-inch diameter by 2-foot 6-inch height, 40 gallons;
- o two product solvent tanks, G-5 and G-6, 5-foot 2-inch diameter by 4-foot height, each 565 gallons;
- o wash tank, G-1, contaminated solvent, 4-foot 8-inch diameter by 12-foot height, 1500 gallons;
- o low boiler tank, G-4, 3-foot 10-inch diameter by 12-foot height, 1000 gallons; and
- o two membrane filters, 6-inch diameter by 10-inch length.

All tanks listed on the SCAQMD permit were AGTs. During the VSI, facility personnel indicated that wash tank G-1 was previously designated as AGT 34 and that low boiler tank G-4 was previously designated as AGT 35 (11). Despite the changes in the tank sizes and numerical designations, the mechanics of the waste treatment process were identical to that previously described for Unit 3.7. However, the treatment capacity of the modified system was increased from 300 gallon batches to 1100 gallon batches in the new reboiler (9, 11). This version of the Abcolene solvent recovery system was included on Rho-Chem's 1980 Part A application. It was also described in the facility's original Operation Plan (circa 1980). Both documents stated that waste fluorinated solvents were stored underground (in one of USTs 33-38) prior to treatment (4, 5). During the VSI, Rho-Chem personnel stated that the Abcolene system had treated only small amounts of fluorinated waste solvents and was not used after 1972; they did not believe that fluorinated wastes had been stored underground (11).

Date of Startup: The exact date of startup of this version of this unit is unknown. However, the Los Angeles County APCD issued a "Permit to Operate" for this version of the Abcolene solvent recovery system on September 5, 1967 (9).

Date of Closure: Although this unit was described in Rho-Chem's 1980 Part A application, facility representatives stated that this unit was not used after 1972. The still remained on-site until sometime between 1981 and 1985 (11). The exact removal dates for the outdoor components of this unit (AGT 34/G1 and AGT 35/G4) are unknown, but are believed to be some time in 1970 (prior to the installation of the Flash Drum Solvent Recovery System, Unit 3.9) (11).

Waste Managed: The system treated fluorinated waste solvents (actually a mixture of fluorinated, chlorinated, and water soluble solvents) at a reported capacity of 100 gallons per hour (5, 11).

Release Controls: The Abcolene still (G3) and AGTs G2, G5, and G6 were located inside of the north warehouse on an unbermed, concrete-paved area. AGTs G1 and G4 were located outdoors on an unbermed, concrete-paved area. For air pollution control, the still was equipped with a refrigerator-type condenser powered by a one-horsepower compressor (9). No release controls for the tanks were described in the files reviewed.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.8.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases from this unit to soil and groundwater because all components of this unit were located on a concrete-paved surface and because most components of the unit were located in a building. There is no ongoing potential for releases to soil or groundwater as this unit is no longer in service.

Surface Water Release Potential: There is low potential for past releases to surface water because the topography of the surrounding area is flat and because most of the components of this unit were located in a building. There is no ongoing potential for releases to surface water because this unit is no longer in service.

Air Release Potential: There is low potential for past releases to air because the unit was operated as a closed system and was equipped with a refrigerator-type condenser. There is no potential for ongoing releases to air because the unit is no longer in service.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the waste storage and transfer activities occurred above-ground on a concrete-paved area.

3.9 FLASH DRUM SOLVENT RECOVERY SYSTEM

3.9.1 Information Summary

Unit Description: This unit operated during the early 1970s and was also known as the "hot oil and tube bundle still" (11). The unit was regulated under Permit #P-40497 by the Los Angeles County APCD (now part of SCAQMD) (9). According to the permit, this unit was comprised of the following:

- o solvent heater, oil-bath type, 4 feet wide by 12 feet 9 inches long by 3 feet 6 inches high, electrically heated;
- o flash drum, 3 feet 4 inches wide by 3 feet 4 inches long by 12 feet high;
- o heat exchangers, 1-foot 6-inch diameter by 15 feet long; and
- o settling tank, 2 feet wide by 2 feet long by 2 feet high.

Other components of this unit not specified on the permit, but included on a diagram submitted to the Inglewood Fire Department, were a dirty solvent feed tank, a sludge tank for storing flash drum waste solids, and a storage tank for reclaimed solvents (27). During the VSI, facility personnel speculated that these may have been AGT 36, UST 27, and UST 23, respectively (11).

Date of Startup: The exact date of startup of this unit is unknown, but is believed to have been some time in 1970. The Los Angeles County APCD issued a "Permit to Operate" for this unit on October 29, 1970 (9, 11).

Date of Closure: The exact closure date is unknown but is believed to be some time in 1972 or 1973 (9, 11) .

Waste Managed: The unit treated waste chlorinated solvents.

Release Controls: This solvent recovery system was located on an unbermed, concrete-paved area. No other release controls for this unit were described.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.9.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases to soil and groundwater from the above-ground components of this unit because the area was concrete-paved. Assuming that UST 27 was part of this unit, the potential for releases to have occurred during the time that it was part of this unit is considered low because that tank had been installed only six years previously. There is no ongoing potential for releases to soil and groundwater because this unit is no longer in service.

Surface Water Release Potential: There is low to moderate potential for past releases to surface water because the unit was not bermed. Although the topography of the surrounding area is flat, yard runoff could have entered the storm drain system and released to San Pedro Bay via the Dominguez Channel. There is no ongoing potential for releases to surface water because this unit is no longer in service.

Air Release Potential: There is low potential for past releases to air because the unit was operated as a closed system. There is no potential for ongoing releases to air because the unit is no longer in service.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases from the above-ground components of this unit because the area was concrete-paved. The potential for subsurface gas releases to have occurred from UST 27 during the time it was part of this unit is considered low because that tank had been installed only six years previously. There is no ongoing potential for subsurface gas releases because this unit is no longer in service.

3.10 BARON-BLAKESLEE SOLVENT RECOVERY SYSTEM

3.10.1 Information Summary

Unit Description: Facility personnel stated that this unit operated in the same manner as a vapor degreaser (11). The unit was regulated under Permit #P-53414 by the Los Angeles County APCD (now part of SCAQMD) (9). According to the permit, this unit was comprised of the following:

- o solvent recovery still, Baron-Blakeslee Model B-210, steam-heated;
- o water separator, 2 feet by 2 feet by 2 feet;
- o surge tank, 6 feet wide by 8 feet long by 3 feet high, 1,000 gallons; and
- o transfer pump, Marlow centrifugal type.

The unit was located in the north-central portion of the facility; however, the exact configuration of the above-listed components is unknown (9, 11).

Date of Startup: The exact startup date is unknown, but facility personnel estimate some time in 1973. The Los Angeles County APCD issued a "Permit to Operate" for this unit on July 9, 1973 (9, 11).

Date of Closure: The exact closure date is unknown but is estimated to be some time in 1975.

Wastes Managed: The unit treated waste chlorinated solvents.

Release Controls: This solvent recovery system was located on an unbermed, concrete-paved area. No other release controls for this unit were described.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.10.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases from this unit to soil and groundwater because all components of this unit were located above-ground on a concrete-paved surface. There is no ongoing potential for releases to soil or groundwater as this unit is no longer in service.

Surface Water Release Potential: There is low to moderate potential for past releases to surface water because the unit was not bermed. Although the topography of the surrounding area is flat, yard runoff could have entered the storm drain system and released to San Pedro Bay via the Dominguez Channel. There is no ongoing potential for releases to surface water because this unit is no longer in service.

Air Release Potential: There is low potential for past releases to air because the unit was operated as a closed system. There is no potential for ongoing releases to air because the unit is no longer in service.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases because the unit was located above-ground on a concrete-paved area. There is no potential for ongoing subsurface gas releases because the unit is no longer in service.

3.11 USTs 13 AND 14

3.11.1 Information Summary

Unit Description: USTs 13 and 14 each have 5,000-gallon capacities. They are located beneath the southwestern portion of the site, approximately four to six feet below ground surface. Both tanks are reportedly unlined, single-walled, carbon steel (9, 13). The contents of the tanks have varied since their installation. Apparently, they have been used for storing virgin materials (UST 13-methyl alcohol, UST 14-isopropyl alcohol) as well as wastes (3). Waste chlorinated solvents were pumped from 55-gallon drums into these USTs for storage pending treatment in the chlorinated solvent recovery systems (Units 3.4 and 3.5) in use during the mid-1960s (3, 11).

Date of Startup: These USTs were installed between 1956 and 1958 (12). Facility personnel estimated that these USTs were used for storage of waste solvents from 1964 to 1967 (11).

Date of Closure: These USTs remain on-site, although they have probably not contained waste solvents since 1967. The tanks are currently empty (11).

Wastes Managed: On bulk-storage inventory reports submitted to the Inglewood Fire Department, Rho-Chem reported that these USTs contained "dirty material" and "ethane (used)" (3). During the VSI, facility personnel confirmed that these USTs had stored waste 1,1,1-trichloroethane (11).

Release Controls: No records of release controls are described in the files reviewed. The tanks are unlined and unvaulted (13).

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.11.2 Conclusions

Soil/Groundwater Release Potential: There is moderate potential for past releases to soil or groundwater due to the age of the tanks (at least 10 years old) at the time they were used for waste solvent storage. There is no ongoing potential for releases to soil or groundwater because waste solvents are no longer stored in these USTs; the tanks are currently empty (11).

Surface Water Release Potential: There is low potential for past releases to surface water because the unit is buried at least four to six feet below ground surface. There is no ongoing potential for releases to surface water because waste solvents are no longer stored in these USTs.

Air Release Potential: There is low potential for past releases to air because the unit is buried at least four to five feet below ground surface. There is no ongoing potential for releases to surface water

because waste solvents are no longer stored in these USTs.

Subsurface Gas Release Potential: If the USTs remained intact, the potential for past subsurface gas releases is probably low. If the USTs or associated piping leaked, there is moderate potential for past subsurface gas releases because volatile organics were stored in the tanks. The waste that was stored in this unit (e.g., waste 1,1,1-TCA) is listed in the RFA Guidance Manual as a volatile waste of concern for subsurface gas releases (26). There is no potential for ongoing subsurface gas releases because waste solvents are no longer stored in these USTs.

3.12 UST 19

3.12.1 Information Summary

Unit Description: UST 19 has a 4,000-gallon capacity. It is located beneath the southwestern portion of the site, approximately four to six feet below ground surface. The unit is reportedly an unlined, single-walled carbon steel tank (9, 13). The contents of this UST have varied since its installation. This tank has been used for storing virgin materials ("BB cutting oil," Perc "e," n-butyl acetate, and methyl isobutyl ketone) as well as wastes (3). Waste chlorinated solvents were pumped from 55-gallon drums into UST 19 for storage pending treatment in the chlorinated solvent recovery systems (Units 3.4 and 3.5) in use during the mid-1960s (3, 11).

Date of Startup: This UST was installed between 1956 and 1958 (12). Facility personnel estimated that UST 19 was used for storage of waste solvents from 1964 to 1967 (11).

Date of Closure: This UST remains on-site, although it has probably not contained waste solvents since 1967. The tank is currently empty (11).

Wastes Managed: On a bulk-storage inventory report submitted to the Inglewood Fire Department, Rho-Chem reported that this unit contained "Perc (dirty)" (3) During the VSI, facility personnel confirmed that this UST had been used to store waste tetrachloroethylene (perc) (11).

Release Controls: No records of release controls are described in the files reviewed. This UST is neither lined nor vaulted (13).

History of Releases: No records of releases for this unit were found in the documents reviewed or in discussions with current facility personnel.

3.12.2 Conclusions

Soil/Groundwater Release Potential: There is moderate potential for past releases to soil or groundwater due to the age of the tank (at least 10 years old) at the time it was used for waste solvent storage. There is no ongoing potential for releases to soil or groundwater because waste solvents are no longer stored in this UST; the tank is currently empty (11).

Surface Water Release Potential: There is low potential for past releases to surface water because the unit is buried at least four to six feet below ground surface. There is no ongoing potential for releases to surface water because waste solvents are no longer stored in this UST.

Air Release Potential: There is low potential for past releases to air because the unit is buried at least four to five feet below ground surface. There is no ongoing potential for releases to surface water because waste solvents are no longer stored in this UST.

Subsurface Gas Release Potential: If the UST remained intact, the potential for past subsurface gas releases is probably low. If the UST or associated piping leaked, there is moderate potential for past subsurface gas releases because volatile organics were stored in the tanks. The waste that was stored in this unit (e.g., waste tetrachloroethylene) is listed in the RFA Guidance Manual as a volatile waste of concern for subsurface gas releases (26). There is no potential for ongoing subsurface gas releases because the tank is no longer used for waste solvent storage.

3.13 AGT 51

3.13.1 Information Summary

This above-ground tank is located in a concrete-paved, bermed area in the northwestern corner of the site. The cylindrical steel tank is 11 feet in diameter and 17 feet 10 inches high and has a capacity of 13,000 gallons. The unit is regulated by the Los Angeles County APCD under #P-21885 (9). The contents of this tank has varied since its installation. AGT 51 appears to have been used primarily for the storage of recycled solvents, virgin trichloroethylene, and virgin tetrachloroethylene, although available file information indicates that "Abcolene-used" was stored in this unit at one time (3, 9). However, current facility personnel were unable to confirm that wastes had ever been stored in this tank (11).

Date of Startup: The exact startup date is unknown, but the tank was installed some time in 1967. The Los Angeles County APCD issued a "Permit to Operate" for this unit on August 30, 1967 (9).

Date of Closure: This unit is currently used for storing virgin product or reclaimed solvents. The time period during which "used Abcolene" was stored in this unit is not known.

Wastes Managed: On a bulk-storage inventory report submitted to the Inglewood Fire Department, Rho-Chem reported that AGT 51 contained "Abcolene-used" (3). However, facility personnel stated that they cannot recall wastes ever having been stored in AGT 51 (11).

Release Controls: The tank has a pressure relief valve which is set to vent to the atmosphere if the vapor pressure in the tank exceeds 2 pounds per square inch (psi) (9). No other records of release controls prior to 1982 are described in the files reviewed. After 1982, the northwest tank farm area was bermed (11).

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.13.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases to soil and groundwater because the tank was located above-ground and the area was concrete-paved. There is no potential for ongoing releases to soil or groundwater because waste solvents are not currently stored in this unit.

Surface Water Release Potential: There is low to moderate potential for past releases to surface water because the unit was not bermed until 1982. Although the topography of the surrounding area is flat, yard runoff could have entered the storm drain system and released to San Pedro Bay via the Dominguez Channel. There is no potential for ongoing releases to surface water because waste solvents are not currently stored in this unit and because the area was had berms installed in 1982.

Air Release Potential: There is low potential for past releases to air. There is no potential for ongoing releases to air because waste solvents are not currently stored in this unit.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases because the unit is located above-ground on a concrete-paved area. There is no potential for ongoing subsurface gas releases because waste solvents are not currently stored in this unit.

3.14 DRUMMED WASTE UNLOADING AREA, 1967-1988

3.14.1 Information Summary

Unit Description: Facility personnel identified the area along the concrete-paved driveway on the northwestern portion of the facility as the drummed waste unloading area in use from 1967 to January 1988 (11). The exact size of the area is not known. The majority of waste solvent loads received at Rho-Chem at this time were contained in 55-gallon drums and were transported to the facility on Rho-Chem trucks. Drums were off-loaded using the truck lift gates and transported with forklifts to Mixed Waste Drum Storage Area I (Unit 3.15). Rho-Chem drivers assisted in the unloading and then moved their trucks to the loading dock to be filled with drums of virgin or recycled solvent for the next day's deliveries (1).

Date of Startup: The exact date of startup of this unit is unknown, but facility personnel estimated that wastes were first unloaded in this area in 1967 (11).

Date of Closure: Since January 1988, incoming drums of waste solvent have been stored in the South Warehouse, so this unit is no longer used as a waste unloading area (11).

Wastes Managed: In general, wastes received have included chlorinated solvents, fluorinated solvents, ketones, alcohols, aromatic solvents and assorted mixed solvents (1).

Release Controls: The drummed waste unloading area is concrete-paved. Other release controls, if any, are not documented in the files reviewed.

History of Releases: No evidence of releases from the concrete-paved unit was found in the documents reviewed. (Refer to Unit 3.2 and Section 6.1 for a discussion of the use of the middle of the unpaved western portion of the facility as a residual solvent disposal area).

3.14.2 Conclusions

Soil/Groundwater Release Potential: There is low to moderate potential for past releases to soil and groundwater. During the VSI, numerous cracks were observed in the concrete in the rear yard area on which incoming drums of waste solvents were unloaded. There is no potential for ongoing releases to soil or groundwater because waste solvents are not currently unloaded in this area.

Surface Water Release Potential: There is moderate potential for past releases to surface water because the unit was not bermed and was located at the rear of the north driveway, which is sloped to drain towards Isis Avenue. Although the topography of the surrounding area is flat, yard runoff could have entered the storm drain system and released to San Pedro Bay via the Dominguez Channel. There is no potential for ongoing releases to surface water because waste solvents are not currently unloaded in this area.

Air Release Potential: There is low potential for past releases to air because the containers were closed for shipment. There is no potential for ongoing releases to air as this area is not currently used to unload waste solvents.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases because the unit is located above-ground on a concrete-paved area. There is no potential for ongoing subsurface gas releases as this area is no longer used to unload waste solvents.

3.15 INCOMING DRUM STORAGE AREA I/CURRENT DRUM PUMPING AREA

3.15.1 Information Summary

Unit Description: Two configurations of this area have existed: one without containment and one with berms. Rho-Chem described the unbermed area as its "Waste Identification and Pumping Area" in the first Operation Plan submitted to DOHS in 1980 (4). This area had been located on the northeastern portion of the facility above USTs 33 to 44 (Units 3.16 and 3.17) since 1967. Incoming drums of various waste solvents were moved by forklift from the Drummed Waste Unloading Area (Unit 3.14) to the original unbermed, concrete-paved area. Rho-Chem personnel reportedly checked the specific gravity of the contents of each drum in this area. Drums were then grouped as containing fluorinated, chlorinated, or non-halogenated solvents. Product labels on the drum plus color-coded hazardous waste labels assisted in this identification (1). Chlorinated solvents were further separated into drums of tetrachloroethylene (perc) and 1,1,1-TCA by sense of smell (11). The chlorinated and fluorinated solvents were subsequently pumped into USTs 33-38 (Unit 3.16) for storage pending treatment (except between 1972 and 1985, when fluorinated waste solvents were shipped to Romic for treatment). Non-halogenated (flammable) solvents were pumped into USTs 39 to 44 (Unit 3.17) for storage pending off-site disposal at BKK. A diaphragm suction pump and hoses were used to transfer the wastes into the USTs. The empty drums were sealed and stored on the eastern edge of the unit pending pick-up by a registered drum reconditioner (1, 11). The empty drum storage area has been designated as a separate SWMU due to observations made during the VSI (see Unit 3.36).

The bermed version of this unit was built in the same location subsequent to the removal of USTs 33-44 in 1982. The 23-foot by 117-foot storage and drum pumping area is contained by a 6-foot-high wall to the south and east by a 6-inch to 12-inch-high berm to the north and west. The unit is gently sloped to the east at a grade of 2 inches per 8 linear feet (1). A 10-foot long rainwater collection sump (Unit 3.33) is located along the northeastern edge of the bermed area. It directs rainwater flow to a low spot in the eastern end of the bermed area. Using fixed piping (mounted at the base of the eastern and northern containment walls) and a portable pump, facility personnel can pump liquid out of the sump into AGT 42 if needed. After the reconstruction, incoming wastes were stored in this area pending waste identification and were subsequently pumped into AGTs 33-42 (Unit 3.20).

Currently this bermed area serves as the facility's drum pumping area. Since January 1988, the incoming drums have been staged in the south/middle warehouse (Unit 3.29) while samples are collected from each drum for lab analysis (28). After analytical verification, the drums are moved with forklifts to the outdoor bermed pumping area. To filter out solids, the positively-identified wastes are pumped from 55-gallon drums through a filtration tank (Unit 3.31) to the storage tanks (AGTs 33-42). Additionally, empty unrinsed drums are stored in the eastern portion of the bermed area awaiting pick-up by Cooper, a used drum reconditioner (1, 11).

Date of Startup: The exact startup date is unknown, but is believed to be some time in 1967 for the unbermed version and 1982 for the bermed version.

Date of Closure: The unit is currently active as the drum pumping area.

Wastes Managed: The wastes handled in this unit are identical to those described under Unit 3.14.

Release Controls: Prior to 1982, the area was concrete-paved but not bermed. The unit was then rebuilt with a containment adequate to hold the volume of the largest container and precipitation from a 24-hour, 25-year storm (1). The area is designed so that such liquids will flow into a collection sump and be pumped into AGT 42 (1, 11).

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.15.2 Conclusions

Soil/Groundwater Release Potential: There is low to moderate potential for past and ongoing releases to soil and groundwater. Although the drums are located on a concrete-paved area, some cracks and stains in and on the concrete were noted during the VSI.

Surface Water Release Potential: There is low to moderate potential for past releases to surface water because the unit was not bermed until 1982. Although the topography of the surrounding area is flat, yard runoff could have entered the storm drain system and released to San Pedro Bay via the Dominguez Channel. There is low potential for ongoing releases to surface water via that route because the area is bermed.

Air Release Potential: There is low potential for past and ongoing releases to air because the drums that are stored there awaiting pumping are sealed.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the unit is located above-ground.

3.16 USTs 33-38

3.16.1 Information Summary

Unit Description: The six USTs in this unit were located beneath the northeastern portion of the facility from 1967 until 1982. Rho-Chem identified these USTs on its 1980 Part A application as hazardous waste storage tanks. Each tank had a capacity of 5,000 gallons (5). The dimensions, construction materials, and the depths at which the tanks were buried were not found in the files reviewed. Facility personnel estimated that these tanks had been buried four to six feet below ground surface. They also stated that USTs 33 and 34 were lined with "heresite," a baked epoxy/phenolic coating. No other construction details could be provided (11). Fluorinated and chlorinated waste solvents were pumped into the USTs from 55-gallon drums (located above in Unit 3.15) using a diaphragm suction pump and flexible hoses. Occasionally, bulk loads of chlorinated wastes were received and drained by gravity into the appropriate UST. Each UST had a dedicated inlet pipe marked with a metal identification tag to facilitate proper waste transfer (4). The wastes were stored pending treatment in various solvent recovery systems, although after 1972 fluorinated wastes were shipped to Romic for treatment. According to the original Operation Plan, wastes were pumped from the USTs to the solvent recovery systems through permanent steel piping (4). During the VSI, however, facility personnel stated that the wastes were pumped up to AGTs 45 and 46, which served as the waste feed tanks for the chlorinated solvent recovery systems (11). (Note: AGTs 45 and 46 refers to the tanks that had originally been numbered as 39 and 40-see Unit 3.3).

Date of Startup: The exact startup date is unknown, but is believed to be some time in 1967 (11).

Date of Closure: The six USTs in this unit were reportedly excavated on March 3, 1982 (14). Based on available file information, the unit did not appear to undergo a formal RCRA closure.

Wastes Managed: This unit received chlorinated and fluorinated waste solvents. Approximately 5,000 to 10,000 gallons per month were received (circa 1980) (4).

Release Controls: No records of release controls were available in the files reviewed. Facility personnel stated that USTs 33 and 34 were lined with heresite, a baked epoxy/phenolic coating. USTs 35-38 were unlined. None of the tanks were vaulted (11).

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel. According to facility personnel, the condition of the tanks at the time of removal was satisfactory (11). No soil samples were collected subsequent to tank removal. Apparently, State regulations requiring subsurface investigations subsequent to UST removal had not yet been promulgated.

3.16.2 Conclusions

Soil/Groundwater Release Potential: There is moderate potential for past releases to soil or groundwater due to the the length of time (15-plus years) that waste solvents were stored in this unit. No leak detection program was in place during that time period, so the integrity of the tanks and their associated underground piping cannot be verified. There is no potential for ongoing releases from the unit to soil or groundwater because the tanks were removed in 1982.

Surface Water Release Potential: There is low potential for past releases to surface water because the unit was located approximately four to six feet below ground surface. There is no potential for ongoing releases from the unit to surface water because the unit no longer exists.

Air Release Potential: There is low potential for past releases to air because the unit was located approximately four to six feet below a concrete-paved ground surface. There is no potential for ongoing releases to air from the unit because the unit no longer exists.

Subsurface Gas Release Potential: If the USTs remained intact, the potential for past subsurface gas releases is probably low. If the USTs or associated piping leaked, there is moderate potential for past subsurface gas releases because volatile organics were stored in the tanks. The wastes that were stored in this unit (e.g., waste toluene) are listed in the RFA Guidance Manual as volatile wastes of concern for subsurface gas releases (26). There is no potential for ongoing subsurface gas releases from the unit because the tanks were removed in 1982.

3.17 USTs 39-44

3.17.1 Information Summary

Unit Description: The six USTs were located beneath the northeastern portion of the facility, directly east of Unit 3.16, from 1967 until 1982. Rho-Chem identified these USTs on its 1980 Part A application as hazardous waste storage tanks. UST 39 had a 10,000-gallon capacity; USTs 40-44 were 5,000 gallons each (5). Details concerning tank dimensions, construction materials, and the depths at which the tanks were buried were not found in the files reviewed. Facility personnel estimated that these tanks had been buried four to six feet below ground surface. No other construction details could be provided. Additionally, these USTs were "used" tanks, e.g., Rho-Chem had obtained them from some other business. Facility personnel could not recall who the prior owners were or what the tanks may have contained previously (11).

Flammable, non-halogenated solvents were pumped into this unit from drums located above in Incoming Drum Storage Area I (Unit 3.15). In the late 1970s and early 1980s, approximately 2000 to 5000 gallons per month were received. During waste transfer, the outlet side of the diaphragm suction pump was connected to a UST inlet pipe. The inlet pipes were marked with metal identification tags to facilitate proper waste transfer. Non-halogenated waste solvents were accumulated in this unit pending off-site disposal at BKK Landfill (4).

Date of Startup: The exact startup date is unknown, but is believed to be some time in 1967 (11).

Date of Closure: The six USTs in this unit were reportedly excavated on March 3, 1982 (14). Base on available file information, the unit did not appear to undergo a formal RCRA closure.

Wastes Managed: This unit received non-halogenated aromatic and aliphatic solvents, ketones, and alcohols. Approximately 2,000 to 5,000 gallons per month were received (circa 1980) (4).

Release Controls: No records of release controls were available in the files reviewed.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel. According to facility personnel, the condition of the tanks at the time of removal was satisfactory (11). No soil samples were collected subsequent to tank removal. Apparently, State regulations requiring subsurface investigations subsequent to UST removal had not yet been promulgated.

3.17.2 Conclusions

Soil/Groundwater Release Potential: There is moderate potential for past releases to soil or groundwater due to the the length of time (15-plus years) that waste solvents were stored in this unit. Additionally, since

these tanks had been used at some other facility, the exact age of the tanks cannot be determined. No leak detection program was in place during that time period, so the integrity of the tanks and their associated underground piping cannot be verified. There is no potential for ongoing releases to soil or groundwater from the unit because the tanks were removed in 1982.

Surface Water Release Potential: There is low potential for past releases to surface water because the unit was located approximately four to six feet below ground surface. There is no potential for ongoing releases to surface water from the unit because the unit no longer exists.

Air Release Potential: There is low potential for past releases to air because the unit was located approximately four to six feet below a concrete-paved ground surface. There is no potential for ongoing releases to air from the unit because the unit no longer exists.

Subsurface Gas Release Potential: If the USTs remained intact, the potential for past subsurface gas releases is probably low. If the USTs or associated piping leaked, there is moderate potential for past subsurface gas releases because volatile organics were stored in the tanks. The wastes that were stored in this unit (e.g., waste tetrachloroethylene) are listed in the RFA Guidance Manual as volatile wastes of concern for subsurface gas releases (26).

3.18 DELTA DS-180 STILLS SOLVENT RECOVERY SYSTEM

3.18.1 Information Summary

Unit Description: The Delta DS-180 solvent recovery system was listed on Rho-Chem's 1980 Part A application (5). The unit was located on a concrete-paved area in the north-central portion of the site. Facility personnel stated that this unit operated in the same manner as a vapor degreaser (11). The unit was regulated under Permit #M16283 by the Los Angeles County APCD (now part of SCAQMD) (9). According to the permit, this unit was comprised of the following:

- o two steam-heated Delta DS-180 solvent recovery stills;
- o two water separators, each 2 feet wide by 2 feet long by 2 feet high;
- o surge tank, 4 feet 6 inches wide by 10 feet long by 3 feet 11 inches high;
- o surge tank, 3 feet 6 inches wide by 6 feet 6 inches long by 3 feet 11 inches high; and
- o two feed tanks, 500-gallon capacity.

Each still was capable of processing 180 gallons per hour of waste solvents. Rho-Chem's original Operation Plan (circa 1980) described them as simple "pot stills" of stainless-steel construction. The stills were reportedly connected to USTs 33-38 (Unit 3.16) by permanent steel piping. Waste from USTs 33-38 (Unit 3.16) was pumped through steel piping to fill the "boil tank" and the entire batch distilled. Still bottoms were emptied into UST 27 (Unit 3.19) and the entire process repeated as necessary (4).

Date of Startup: The exact startup date is unknown. Facility personnel stated that one Delta DS-180 still was in operation beginning in 1975 and that the second still was added in 1978 (11).

Date of Closure: The exact date of closure of this unit is unknown, but SCAQMD files indicate that it was removed in September 1981 (9).

Wastes Managed: The unit treated waste chlorinated solvents. In 1980, approximately 5,000 to 10,000 gallons were treated per month (4).

Release Controls: The stills themselves were reportedly closed-loop systems. No release controls for other components of the unit were described in the files reviewed.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.18.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases to soil or groundwater because all components of the unit were located above-ground on a concrete-paved area. There is no ongoing potential for releases to soil or groundwater as this unit is no longer in service.

Surface Water Release Potential: There is low to moderate potential for past releases to surface water because the unit was not bermed. Although the topography of the surrounding area is flat, yard runoff could have entered the storm drain system and released to San Pedro Bay via the Dominguez Channel. There is no ongoing potential for releases to surface water as this unit is no longer in service.

Air Release Potential: There is low potential for past releases to air because the stills were operated as a closed system. There is no ongoing potential for releases to air as this unit is no longer in service.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases because the unit was located above-ground on a concrete-paved area. There is no potential for ongoing subsurface gas releases because the unit is no longer in service.

3.19 UST 27

3.19.1 Information Summary

Unit Description: This 5,000-gallon UST was located beneath the western portion of the facility, approximately 30 to 50 feet east of Unit 3.2, the residual solvent disposal area. Rho-Chem identified this UST on its 1980 Part A application as a hazardous waste storage tank. Details concerning tank dimensions, construction materials, and the depth at which the tank was buried were not found in the files reviewed. According to facility personnel, the tank was buried approximately four to six feet below ground surface (5, 11).

Date of Startup: This UST was either installed in October 1962 or at some time in 1963, but the exact startup date for storage of waste is not known (11, 12). File information indicated that the tank stored "wet ethane" (defined by Rho-Chem as 1,1,1-TCA with a moisture content greater than 350,000 ppm) in the mid-1970s and still bottoms from the chlorinated waste solvent recovery systems in the early 1980s (1, 3). However, facility personnel indicated that UST 27 stored still bottoms from the first steam injection still (Unit 3.5) in 1965 (11).

Date of Closure: This UST was removed in May 1983 (15). The exact time period during which wastes were stored in this unit is not known (see above). Based on available file information, the unit did not appear to undergo a formal RCRA closure.

Waste Managed: Still bottoms from the two Delta DS-180 chlorinated solvent recovery stills (Unit 3.18) and the Abcolene fluorinated solvent recovery system (Unit 3.8) were stored in this unit pending off-site disposal at BKK Landfill (4). Still bottoms from version one of the thin film evaporator (Unit 3.22) and from steam injection still #2 (Unit 3.21) were stored in this UST from 1981 to late 1982 or early 1983 (9). Still bottoms from steam injection still #1 were probably stored there also (11).

Release Controls: No records of release controls are described in the files reviewed.

History of Releases: UST 27, as well as USTs 28-30, were reportedly in seriously corroded condition at the time of their removal in May 1983 (17). No soil samples were collected subsequent to tank removal. Apparently, State regulations requiring subsurface investigations subsequent to UST removal had not yet been promulgated. However, during the 1985 Kleinfelder investigation, boring #6 was drilled in the general vicinity of these former USTs. Several contaminants were detected at 5-, 10-, 30-, and 50-foot depths. The highest concentration detected was 3,600 mg/kg of tetrachloroethylene at 5 feet. In general, the concentrations decreased with depth (see Appendix C). However, methylene chloride and toluene were detected only at the 30- and 50-foot depths (24). Whether this is indicative of a release from the USTs formerly located in this area cannot be accurately assessed without additional sampling efforts.

3.19.2 Conclusions

Soil/Groundwater Release Potential: There is moderate potential for past releases to soil or groundwater due to the age of the tank (15 to 20 years) during the time that still bottom wastes solvents from the thin film evaporator and steam injection still #2 were stored in this unit. No leak detection program was in place during that time period, so the integrity of the tank and its associated underground piping cannot be verified. There is no potential for ongoing releases to soil or groundwater from the unit because the tank was removed in 1983.

Surface Water Release Potential: There is low potential for past releases to surface water because the unit was located approximately four to six feet below ground surface. There is no potential for ongoing releases to surface water from the unit because the tank was removed in 1983.

Air Release Potential: There is low potential for past releases to air because the unit was located approximately four to six feet below a concrete-paved ground surface. There is no potential for ongoing releases to air from the unit because the tank was removed in 1983.

Subsurface Gas Release Potential: If the UST remained intact, the potential for past subsurface gas releases is probably low. If the UST or associated piping leaked, there is moderate potential for past subsurface gas releases because volatile organics were stored in the tank. The wastes that were stored in this unit (e.g., waste tetrachloroethylene) are listed in the RFA Guidance Manual as volatile wastes of concern for subsurface gas releases (26). There is no potential for ongoing subsurface gas releases from this unit because the tank was removed in 1983.

3.20 AGTs 33-42

3.20.1 Information Summary

Unit Description: These unlined AGTs are located on the northeast portion of the facility. The tank storage area is bounded by a building wall on the south and a 6-foot-high concrete block wall on the other three sides. Each tank is 22 feet high by 7 feet 11 inches in diameter and has an 8000-gallon capacity. The tanks are fabricated from hot-rolled steel plate with 3/16-inch thick sidewalls and 1/4-inch thick tops and bottoms. The tanks are secured to a 6-inch pad above the finished concrete slab with saddles, J-bars, and reinforced concrete (1). Each tank was originally equipped with a series of five site glasses for determining liquid levels along the length of the tank. In 1986 a Varec Automatic Tank Gauge was installed in each tank (1, 11). The site glasses were replaced by valves to allow collection of samples along the length of the tank. These tanks are regulated under Permit #'s M29130 through M29139 by SCAQMD (9). Since these AGTs are used for storage of hazardous wastes received from off-site generators, they are also RCRA-regulated. Rho-Chem did not file a revised Part A application prior to installing these tanks, however.

These tanks were installed in late 1981 or early 1982. They are used for storage of halogenated and flammable waste solvents pending treatment or blending for use as fuel. The contents of 55-gallon drums stored in the drum pumping area (Unit 3.15) are pumped through a filtration tank (Unit 3.31) to remove solids. The waste solvent is pumped out of the bottom of filtration tank through a hose connected to the appropriate storage AGT. The inlet/outlet port is located at the base of each tank.

In the early 1980s, flammable wastes were piped from the storage tanks to a thin-film evaporator (Unit 3.22) for treatment, while chlorinated wastes were piped to and treated in steam injection still #2 (Unit 3.21) (1). In 1982, Rho-Chem began blending some of the flammable wastes with still bottoms for use in Systech's cement kiln in Lebec, California. In late 1985, Rho-Chem modified this equipment and implemented waste process flow changes (18, 19). Since that time, chlorinated and/or fluorinated wastes (instead of flammable wastes) have been piped from the AGTs to the thin film evaporator. All flammable waste solvents are currently piped to a mixing tank (currently AGT 34) and blended with still bottoms to prepare fuel for the cement kiln (11).

Date of Startup: The startup date for AGTs 33-39 was sometime in early 1982. According to SCAQMD files, AGTs 40-42 initially stored reclaimed flammable solvents (9). The date that these tanks began storing wastes is believed to be some time between 1983 and 1985.

Date of Closure: The unit is currently active.

Wastes Managed: According to Rho-Chem's 1981 permit application to SCAQMD, AGTs 33 to 35 were to be used to store various solvent blends similar to lacquer thinner; AGTs 36 to 38, various blends of waste

solvents; and AGTs 39-42, various blends of chlorinated waste solvents (9). However, Rho-Chem's 1983 Operation Plan states that AGTs 33-35 were to store "clean" solvents; AGTs 36, 40, and 41, mixed flammable waste solvents, and AGTs 37-39 and 42, chlorinated waste solvents (1). Rho-Chem implemented waste process flow changes in 1985/1986 and reported to SCAQMD that AGTs 34 and 41 were used to store wastewater; AGT 35, waste trichlorotrifluoroethane; AGT 36, flammable waste solvents; AGT 37-39 and 42, waste chlorinated solvents; AGT 40, nonrecyclable solvents (which were sent to Systech in Lebec, California); and AGT 33, recycled flammable solvents (19). During the VSI, facility personnel verified that the storage scheme in these tanks had been changed on several occasions (11).

During the VSI, facility personnel presented the current waste storage scheme for AGTs 33-42 as follows: AGTs 33 and 37, waste 1,1,1-TCA; AGT 35, mixed chlorinated waste solvents; AGT 36, waste tetrachloroethylene (perc); AGTs 38 and 40, flammable waste solvents; AGT 39, waste methylene chloride; AGT 41, waste trichlorotrifluoroethane; and AGT 42, wastewater (e.g., rinsate from vapor degreasers and truck washout water from the interior of Rho-Chem's 3500 gallon hazardous waste vacuum truck) (11, 22). This wastewater has been shown to contain chlorinated solvents, flammable solvents, heavy metals, and cyanide. An analysis of the contents of AGT 42 may be found in Appendix G (66). AGT 34 is currently used to blend various flammable wastes to prepare mixtures with BTU contents high enough for use as fuel in Systech's cement kiln. They also noted that waste TF is actually a mixture of TF, water soluble solvents (typically alcohols), and 1,1,1-TCA (11).

Release Controls: Each tank is equipped with two-way pressure/vacuum relief vents. The tanks are certified to withstand internal pressures of 6 psi. Containment for the tank storage area is provided by the north wall of the north warehouse and by 6-foot-high concrete block walls.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.20.2 Conclusions

Soil/Groundwater Release Potential: There is low to moderate potential for past and ongoing releases to soil and groundwater. Although the tanks are located on a thick concrete pad, some cracks and stains in and on the concrete were noted during the VSI.

Surface Water Release Potential: There is low potential for past and ongoing releases to surface water because the unit is surrounded by 6-foot high concrete walls to the west, north, and east and by the wall of the warehouse to the south. Additionally, the topography of the surrounding area is flat.

Air Release Potential: There is low to moderate potential for past and ongoing releases to air. Although the tanks are operated as a closed system, stains were noted on the exteriors of several tanks during the VSI. Facility personnel stated that the most likely reason for the stains was that an employee had been careless when collecting samples

from the sample ports and had allowed waste solvent to run down the sides of the tank (11). Additionally, volatiles may release through the pressure/vacuum relief vents.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because all components of the unit are located above-ground.

3.21 STEAM INJECTION STILL #2 SOLVENT RECOVERY SYSTEM

3.21.1 Information Summary

Unit Description: This unit replaced the Delta DS-180 stills (Unit 3.18) sometime in 1981 and was built on an unbermed, concrete-paved area in the north-central portion of the facility. The system was regulated by SCAQMD under Permit #M29129 (1, 9). As initially installed, the system consisted of the following:

- o steam injection still, 6′ diameter by 12′ long, with one condenser, 1′ diameter by 8′ long, 3600 gallons;
- o water separator, 2′6" diameter by 5′ high;
- o dehydrator 2′6" by 5′ high; and
- o surge tank, 1500 gallons.

The still also had a 1′ diameter by 6′ high surge column. In this initial configuration, still bottoms were piped to UST 27 (Unit 3.19). In late 1982 or early 1983, Rho-Chem installed a 2′ 8" high concrete block berm around the unit and modified the treatment system by adding the following components:

- o a second 1500-gallon surge tank (designated as AGT 28 when installed) for temporary storage of recovered solvents; and
- o a 6000-gallon AGT (designated as AGT 43 when installed) for storing still bottoms.

SCAQMD did not issue a new permit for the whole modified system but regulated AGT 43 separately under Permit #M37957. AGT 43 is 7′11" in diameter by 17′ high (9, 60). The configuration of this later version of the unit is shown in Figure 4D. The steam injection distillation system described in Rho-Chem's 1983 Operation Plan reflects these additions (1). Rho-Chem did not file a revised Part A application prior to the installation of this still, however.

Waste process flow was as follows: Chlorinated waste solvents were pumped from their respective storage tanks through overhead piping to the still. Live steam was then injected into the vessel to vaporize the solvent. The batch processed for 24-36 hours depending on the level of contamination. The overhead product, essentially a mixture of chlorinated solvent and water, passed through a water separator, dryer, and two surge tanks. The recovered solvent was ultimately piped to AGTs 55-58 for storage pending distribution (1).

Date of Startup: The exact date of startup is unknown, but is believed to be in late 1981 or early 1982.

Date of Closure: The exact date of closure is unknown, but is assumed to coincide with waste process flow changes implemented by Rho-Chem in late

1985. The water separator and dryer were removed at that time. Facility personnel believe that the steam injection still subsequently served as the reboiler component of the reboiler/fractionation column solvent recovery system (Unit 3.25). AGT 43 has been renumbered as AGT 66 and is currently used to store mixed waste solvents (see Unit 3.25) (11).

Wastes Managed: This unit treated chlorinated waste solvents by injection of live steam. The treatment capacity was reported as 200 gallons per hour. Depending on the extent of contamination, waste chlorinated solvents were processed for 24 to 36 hours. Still bottoms were reportedly shipped to Systech for incineration in a cement kiln (1, 11, 29).

Release Controls: The unit was constructed on an unbermed, concrete-paved area. Berms were installed around the unit in 1982 or 1983 (11).

History of Releases: On May 10,1982, Inglewood Fire Department responded to a complaint concerning liquid flowing down the street gutter on Isis Avenue outside of Rho-Chem. The Fire Department's report stated that Rho-Chem had dumped a "large amount of perchloroethylene" (perc) into the street and that the spill was subsequently flushed into storm drains by the responding unit (30). Mr. Roehl, current president of Rho-Chem, stated that the release was probably mostly water, with perc dissolved in it, rather than perc alone. He stated that the overhead product from the steam injection still was a mixture of water and perc that passed through the water separator component of this unit for phase separation. He believed that the separator overflowed due to operator error (e.g., failure to open or close a valve) and released a mixture of water and perc that entered a drain located within 10 to 12 feet of the water separator. Apparently, this drain lead to the gutter on Isis Avenue. According to Mr. Roehl, the drain was sealed after this incident. The quantity spilled is not known (7).

3.21.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases to soil and groundwater because most components of the unit were located above-ground on a concrete-paved surface. The soil/groundwater release potential for UST 27, which was a component of this unit for approximately two years, is discussed under Unit 3.19. There is no ongoing potential for releases to soil or groundwater because the unit is no longer in service.

Surface Water Release Potential: There is a moderate potential that an indirect release to surface water occurred as a consequence of the overflow of the water separator. Although the topography of the surrounding area is flat, the Inglewood Fire Department flushed the perc-water mixture into the the storm drain system. The storm drain conveys surface runoff to the Dominguez Channel, approximately three miles southeast of the site. The channel empties into San Pedro Bay (59). There is no ongoing potential for releases to surface water because the unit is no longer in service.

Air Release Potential: There is low potential for past releases to air because the unit was operated as a closed system. There is no potential for ongoing releases to air because the unit is no longer in service.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases because the unit was located above-ground on a concrete-paved surface. The subsurface gas release potential for UST 27, which was a component of this unit for approximately two years, is discussed under Unit 3.19. There is no ongoing potential for subsurface gas releases because the unit is no longer in service.

3.22 THIN FILM EVAPORATOR SOLVENT RECOVERY SYSTEM, VERSIONS 1 AND 2

3.22.1 Information Summary

Unit Description: This unit was built on an unbermed, concrete-paved area in the north-central portion of the facility and was originally installed to treat flammable waste solvents. Currently the unit treats primarily chlorinated waste solvents (1, 9). In the thin film evaporator, solvents are volatilized and separated from the heavier constituents of the waste (e.g., oil, grease, and particulates) (11). Several versions of this unit have been permitted by SCAQMD (9). The original equipment, under Permit #M30732, consisted of:

- o thin film evaporator, 2′ diameter by 14′ high, steam heated, with a 20 horsepower rotor motor;
- o condenser, 1′ diameter by 8′ long; and
- o 1 surge tank for holding reclaimed solvent, 1500-gallon capacity.

In the configuration described above, still bottoms were piped to UST 27 (Unit 3.19) In late 1982 or early 1983, Rho-Chem installed a 2′ 1" high concrete block berm around the unit and modified the system by doing the following:

- o replacing the 1500-gallon reclaimed solvent surge tank with a 4000-gallon AGT (designated as AGT 45 when installed);
- o adding a 4000-gallon waste solvent feed AGT (designated as AGT 46 when installed); and
- o adding a 6000-gallon AGT (designated as AGT 27 when installed) for storing still bottoms.

The 4000-gallon AGTs are each 6′3" in diameter by 17′ high. The 6000-gallon AGT is 7′ 11" in diameter by 17′ high. SCAQMD issued Permit #M40650 for the second version of this system and Permit #M37956 for the still bottoms storage tank (see Figure 4D for the layout of this unit) (9). The thin film evaporator described in Rho-Chem's 1983 Operation Plan reflects these additions, although the company did not file a revised Part A application prior to the installation of this unit. The system reportedly treated waste flammable solvents at approximately 210 gallons per hour. The reclaimed flammable solvents were piped to AGTs 33-35 for storage pending distribution (1, 9).

In late 1985, Rho-Chem added supplemental treatment tanks (Unit 3.23) to the thin film evaporator and renumbered the existing AGTs in this unit. The waste solvent feed tank is now AGT 31; the first cut reclaimed solvent surge tank, AGT and the still bottoms storage tank, AGT 29 (see Figure 5 for the current configurations of Units 3.22 and 3.23) (18, 19).

After this modification, Rho-Chem changed the waste treatment process flow so that halogenated waste solvents were processed through the thin

film evaporator instead of flammable wastes. Beginning in 1985, the halogenated wastes that were treated also included fluorinated waste solvents, which had not been treated on-site since 1972 (11, 19). Up until early 1988, all waste fluorinated solvents (actually a mixture of TF, water soluble solvents, and 1,1,1-TCA) were initially processed through the thin film prior to further treatment in the reboiler and fractionation column (Unit 3.24). According to the plant manager, treating waste TF in the thin film first has proven unnecessary because the waste TF received generally does not have a high oil and grease content. Therefore, as long as the waste TF doesn't have a high oil and grease content, it is fed directly into the reboiler (Unit 3.24) (20).

Date of Startup: The exact date of startup for the original version of this unit is unknown, but is believed to be late 1981. The exact date of startup for the AGTs added to the original version is unknown. However, UST 27, which stored still bottoms for the original version of this unit, was removed in May 1983, so the revised unit is assumed to have been in use sometime earlier in 1983 (9, 11, 15). Supplemental treatment tanks (Unit 3.23) were added to the second version of this unit in late 1985 (18, 19).

Date of Closure: The unit is currently active.

Wastes Managed: Flammable (non-halogenated) waste solvents were treated from approximately 1981 to 1985. Beginning in 1982, some incoming flammable wastes were blended with still bottoms for use as fuel in Systech's cement kiln. Since 1985, all incoming flammable waste solvents have been blended with still bottoms from the thin film for use as fuel in the cement kiln rather than recycled through the thin film evaporator. However, the unit is still capable of treating these wastes (1, 9, 11).

Currently the unit treats primarily chlorinated waste solvents, which are mixtures of chlorinated solvents, water soluble solvents (e.g., alcohols), water, oil, grease, and dirt. Fluorinated waste solvents are also treated in the thin film if a particular batch has a high oil and grease content. Facility personnel stated that fluorinated waste solvents are mixtures of fluorinated solvents, water soluble solvents, 1,1,1-TCA, and varying amounts of oil and grease (11, 20).

Release Controls: The unit was constructed on an unbermed, concrete-paved area. Berms were installed around the unit in 1982 or 1983. The AGTs are equipped with two-way vacuum pressure relief valves. No air release controls for the thin film evaporator were described in the files reviewed. However, facility representatives indicated that unit operated as a closed system (1, 9, 11).

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with facility management.

3.22.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases to soil and groundwater because most components of the unit were located above-ground on a concrete-paved surface. The soil/groundwater

release potential for UST 27, which was a component of this unit for approximately two years, is discussed under Unit 3.19. There is low potential for ongoing releases to soil and groundwater because all components of this unit are currently located above-ground in a concrete-paved, bermed area.

Surface Water Release Potential: There is low to moderate potential for past releases to surface water because the unit was not bermed until 1982. Although the topography of the surrounding area is flat, yard runoff could have entered the storm drain system and released to San Pedro Bay via the Dominguez Channel. There is low potential for ongoing releases to surface water because the unit has been contained by a berm since 1982.

Air Release Potential: There is low potential for past and ongoing releases to air because the unit is operated as a closed system.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases because the unit was located above-ground on a concrete-paved surface. The subsurface gas release potential for UST 27, which was a component of this unit for approximately two years, is discussed under Unit 3.19. There is low potential for ongoing subsurface gas releases because all components of this unit are currently located above-ground in a concrete-paved, bermed area.

3.23 THIN FILM EVAPORATOR SUPPLEMENTAL TREATMENT TANKS

3.23.1 Information Summary

Unit Description: This unit is located in a bermed area inside of the north warehouse. As part of the waste process flow modifications in 1985, Rho-Chem added three AGTs and three dryers to the thin film evaporator solvent recovery system (Unit 3.22). SCAQMD issued Permit #M51475 to regulate the modified thin film evaporator solvent recovery system (9, 18, 19). In addition to those components listed under Unit 3.22, the permit covers the following:

- o solvent process tank, AGT 78, 4000 gallons, (part of the water wash system);
- o water process tank, AGT 79, 2000 gallons, (part of water the water wash system);
- o water separator, unnumbered, 2′ in diameter by 8′ high;
- o three dryers, unnumbered, each 2′ diameter by 8′ high; and
- o reclaimed solvent surge tank, AGT 77, 4000 gallons.

This unit provides additional treatment for the first cut of chlorinated solvents that have been processed in the thin film evaporator (Unit 3.23) and for the TF-alcohol mixture that comes off the reboiler and fractionation column (Unit 3.24). Treatment processes in the supplemental tanks consist of: washing mixtures of halogenated and water soluble solvents with water to dissolve the water soluble solvents, separating the wash water (process wastewater with dissolved water soluble solvents) from the halogenated solvents, and drying the separated halogenated solvents (11, 20).

For TF-alcohol mixtures, the process flow is as follows: This mixture comes off the column and is held in AGT 65 (part of unit 3.24) pending further treatment. Batches of approximately 3000 gallons are pumped to AGT 78, the water wash tank. The wash water is piped to AGT 78 from AGT 60 and is pumped through the mixture in AGT 78 from the bottom up. A mixture of water and water soluble solvents (usually alcohols) rises to the top of AGT 78. The TF separates from the water solubles and remains in the lower portion of AGT 78. The top layer is siphoned off and recirculated up through the bottom of the tank. The washing step is repeated until the wash water becomes saturated with dissolved alcohols. At that point, the top layer is gravity-drained to the wash wastewater surge tank (AGT 79). This alcohol-saturated mixture is subsequently pumped to AGT 61 (Unit 3.33) where it is stored pending treatment in the reboiler and fractionation column (Unit 3.24). The TF is drawn off the bottom of AGT 78 and passed through a water separator for further solvent-water separation. TF sinks, is drawn off the bottom of the water separator, and is pumped through one of three molecular sieve dryers en route to AGT 77, the reclaimed solvent surge tank. The reclaimed solvent is held in this tank pending analysis for volatiles and moisture content.

If no further processing is required, recycled TF is pumped to AGT 76 for storage pending distribution. When all of the solvent has been drained from AGT 78 and passed through the water separator, a probe near the bottom of the water separator senses the change in electrical resistance between solvent and water and shuts off the pump that leads to the dryer. A small amount of solvent (10-15 gallons), which remains in the water separator below the sensing probe, is manually drained into a drum and added to the appropriate waste storage AGT (e.g., AGT 42 for TF). The overlying water/alcohol layer is also manually drained into a drum and added to AGT 61 (20).

For chlorinated solvents, the process flow is as follows: The overhead condensate from the thin film evaporator is collected in AGT 30 and pumped to AGT 78. A sample is collected from that tank and analyzed in Rho-Chem's gas chromatograph (GC). If the analysis indicates that water soluble solvents (e.g., alcohols, aldehydes, ketones, etc.) are mixed in with the chlorinated solvents in concentrations greater than 1%, the contents of tank 78 is washed with water to extract the water solubles. Most commonly, the mixed chlorinated waste solvents (which are mixtures of methylene chloride, tetrachloroethylene, and TF) require washing. The washing and drying process for chlorinated solvents is identical to that for TF. If the moisture content is less than 1%, the supplemental treatment consists of passing the solvent through the water separator and dryer as previously described (20).

Date of Startup: The exact date of startup is unknown, but is believed to be late 1985 when Rho-Chem modified its waste treatment process flow.

Date of Closure: The unit is currently active.

Wastes Managed: This unit treats mixtures of fluorinated solvents and water soluble alcohols (as noted above). Chlorinated solvent-water soluble solvent mixtures may undergo the water washing process if their moisture content is greater that 1%, otherwise they are further processed in the water separator and dryer only.

Release Controls: This unit is located in a bermed area inside of the north warehouse. AGTs 77-79 are equipped with two-way pressure vacuum relief valves. The tanks and dryers in this unit are operated as a closed system (11).

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.23.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past and ongoing releases to soil and groundwater because the unit is located in a concrete-paved, bermed area within a building.

Surface Water Release Potential: There is low potential for past and ongoing releases to surface water because the unit is located in a concrete-paved, bermed area within a building and because the topography of the surrounding area is flat.

Air Release Potential: There is low potential for past and ongoing releases to air because the unit is operated as a closed system.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the unit is located in a concrete-paved, bermed area within a building.

3.24 REBOILER/FRACTIONATION COLUMN SOLVENT RECOVERY SYSTEM

3.24.1 Information Summary

Unit Description: In late 1985, Rho-Chem modified the waste treatment systems to operate in series rather than in parallel. All waste solvents were initially treated in the thin film evaporator and may or may not have been further treated by fractional distillation in this unit. Whether or not the first cut from the thin film was treated in this unit depended on the nature of the waste solvents and the desired purity of the reclaimed product. To effect this process flow change, Rho-Chem added several tanks and treatment processes. Rho-Chem also replaced the 1-foot diameter by 6-foot high fractionation column with a 42-foot high fractionation column to enhance solvent separation. The original intent was to separate the various solvents in the condensate (from the thin film evaporator) or in the wash wastewater into discrete fractions and to collect each fraction in a separate tank (e.g., alcohols in AGT 60, ketones in AGT 61, etc.) (9, 11, 19).

The system is regulated under permit #M51473 by SCAQMD (9). As initially installed, the unit was comprised of the following:

- one reboiler (designated AGT 68), 4000 gallons;
- fractionation column, 2 feet in diameter by 42 feet high, with 30 feet of packing material, and an overhead condenser;
- water separator (AGT 69), 75 gallons;
- wastewater surge tank (AGT 70), 600 gallons;
- hexane surge tank (AGT 67), 3400 gallons;
- reboiler feed tank (AGT 66) 6000 gallons (currently, AGT 66 is not part of the unit, but is used for storage of incoming waste solvents);
- solvent fraction tanks (AGTs 60-63), 4200 gallons each; and
- solvent fraction tanks (AGTs 64 and 65), 4000 gallons each.

Information submitted by Rho-Chem to SCAQMD and DOHS indicated that the reboiler and fractionation column were to be used in the following ways: to treat fluorinated solvent condensates (actually mixtures of TF, water soluble solvents, and 1,1,1-TCA) to remove the 1,1,1-TCA prior to water washing; to treat wash wastewater saturated with dissolved water soluble solvents; to separate water soluble solvents and higher boiling compounds into discrete fractions; and to separate solvent-water azeotropic mixtures via the addition of hexane (9, 18, 19).

During the VSI, it became apparent that the system was not being used in accordance with the above-mentioned scheme. According to Rho-Chem personnel, the latter two practices proved to be too time-consuming to be

cost effective (11). Facility personnel described the current uses of this system during the VSI and subsequent phone calls as follows: The reboiler and fractionation column are primarily used to treat trichlorotrifluoroethane (TF or CFC 113) and to treat process wastewater. Waste TF consists of TF, water soluble solvents (usually alcohols) and 1,1,1-trichloroethane (1,1,1-TCA) (11). From 1985 to early 1988, waste TF was initially treated in the thin film evaporator (Unit 3.22), then in the reboiler fractionation column, and then in the supplemental treatment tanks (Unit 3.23). According to the plant manager, the waste TF received at Rho-Chem does not usually have a high oil and grease content, so treatment in the thin film proved to be unnecessary. Therefore, in early 1988 Rho-Chem began treating waste TF (with a low oil and grease content) directly in the reboiler (20). Purifying waste TF generally involves a two-phase treatment process to separate it from higher-boiling chlorinated solvents such as 1,1,1-TCA (via the reboiler) and from water soluble solvents such as alcohol (via the supplemental treatment tanks, Unit 3.23) (11, 20).

The waste TF process flow is as follows: Incoming waste TF is stored in AGT 41 (part of Unit 3.20) and is pumped to the reboiler (AGT 68) and heated. TF and the water soluble alcohols have lower boiling points than 1,1,1-TCA and other chlorinated solvents, so they boil up through the column first, pass through a condenser and are collected in AGT 65. At this point, a sample is collected from AGT 65 and analyzed by GC to insure that no chlorinated solvents have come across the column and to assess the concentration of the water soluble solvents in the distillate. If the desired purity has not been achieved, the contents of AGT 65 is routed back through the reboiler. If the analysis is satisfactory, the TF-alcohol mixture is subsequently treated in Unit 3.23 (water-washed in AGT 78 and dried). The purified TF is then piped to AGT 76 for storage pending distribution to customers. The 1,1,1-TCA or some other mixture of chlorinated solvents remains in the bottom of the reboiler; the former is piped over to AGT 37, the latter to AGT 35 (20).

Process wastewater is also treated in the reboiler and fractionation column to separate water soluble solvents from the wash wastewater generated in the thin film evaporator supplemental treatment tanks (Unit 3.23). The process flow for wash wastewater treatment is as follows: Wastewater from AGT 61 is piped to the reboiler and heated. The alcohols concentrate in the column and distill over first. This alcohol-rich overhead product is held in AGT 67 A, B, or C pending a BTU analysis. Typically, this cut has up to 7000-8000 BTUs per pound, so it is pumped over to AGT 38 for storage pending blending with flammable waste solvents in AGT 34. The water remaining in the reboiler is also boiled over, passed through the column, and is piped to AGT 64 (Units 3.34).

Date of Startup: The exact date is unknown, but is believed to be sometime in late 1985 or early 1986 when Rho-Chem modified the waste treatment process flow.

Date of Closure: The unit is currently active.

Wastes Managed: According to facility personnel, the reboiler and 42-foot fractionation column are primarily operated under three

conditions: to purify TF (actually a mixture of fluorinated, chlorinated, and water soluble solvents) that distilled off the thin film evaporator, to directly treat waste TF (which includes the afore-mentioned constituents), provided the waste has a low oil and grease content, and to treat wash wastewater generated in the supplemental treatment tanks (Unit 3.23). By adding hexane to the reboiler, the unit can also be used to break up solvent-water azeotropic mixtures. However, this process is not considered economically feasible, so it is rarely done (11, 20).

Release Controls: The unit is located in a concrete-paved, bermed area. The AGTs are equipped with two-way pressure vacuum relief valves. The valves on AGTs 69 and 70 are connected to pipes that lead to compartment D of AGT 67. Rho-Chem installed this arrangement so that in the event excess liquids were to flow into those tanks, the liquid would be shunted to and collected in compartment D of AGT 67 (11).

History of Releases: On January 25, 1988, a release of TF vapor from AGT 67 D occurred. A mixture of TF and 1,1,1-trichloroethane were being processed in the reboiler. Apparently the cooling water supply to the condenser was insufficient to condense the TF vapor that had separated in the fractionation column, so the surge tank received vapor instead of liquid. The vapor caused a pressure build-up in the AGT which activated the vapor pressure relief valve. Rho-Chem personnel estimated that the equivalent of 28 gallons of TF escaped as vapor. Evidently the TF vapor migrated off-site, because the Inglewood Fire Department received a complaint from an adjacent business regarding odors emanating from Rho-Chem (31, 32, 33).

3.24.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past and ongoing releases to soil and groundwater because all components of the unit are located above-ground in a concrete-paved bermed area.

Surface Water Release Potential: There is low potential for past and ongoing releases to surface water because all components of the unit are located above-ground in a concrete-paved bermed area and because the topography of the surrounding area is flat.

Air Release Potential: In January 1988 an air release of TF vapor occurred following separation of TF from 1,1,1-TCA. Based on the waste characteristics and process flow description provided by the facility, the vapor released was most likely a mixture of TF and water soluble solvents. Under normal operating conditions, this vapor is condensed and collected in AGT 65. The condensate must undergo water washing to remove water soluble solvents before the reclaimed TF is deem suitable for sale. The potential for ongoing releases is considered low provided the condenser is receiving an adequate supply of cooling water.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because all components of the unit are located above-ground on a concrete-paved area.

3.25 AGT 66, 1985 TO PRESENT

3.25.1 Information Summary

Unit Description: This unlined AGT is 7'11" in diameter by 17' high and has a 6000-gallon capacity. It is located on the north-central portion of the facility, just west of the 6-foot high containment wall that forms the western berm for AGTs 33-42. The tank was installed in 1983 to store still bottoms generated in steam injection still solvent recovery system #2 and was assigned Permit #M37957 by SCAQMD at that time (1, 9). Some time after 1985, Rho-Chem began using this AGT for storage of incoming mixed waste chlorinated solvents pending treatment in the thin film evaporator (Unit 3.22). Overhead piping connects this tank to AGT 31, the waste solvent feed tank for Unit 3.22 (11).

Date of Startup: The exact date of startup (for receipt of incoming waste solvents) is unknown, but is believed to be in late 1985 when Rho-Chem modified the waste treatment process flow.

Date of Closure: The unit is currently active.

Wastes Managed: Since 1985, the unit has been used to store a mixture of waste methylene chloride and waste 1,1,1-TCA. Prior to that, AGT 66 was part of Unit 3.21 and received still bottoms from steam injection still #2 (1, 9, 11).

Release Controls: The tank is located in a concrete-paved bermed area. The tank is equipped with a two-way vacuum-pressure relief vent.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.25.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past and ongoing releases to soil and groundwater because the unit is located above-ground on a concrete-paved area.

Surface Water Release Potential: There is low potential for past and ongoing releases to surface water because the topography of the surrounding area is flat and because the unit is located in a bermed area.

Air Release Potential: There is low potential for past and ongoing releases to air because the unit is operated as a closed system.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the unit is located above-ground on a concrete-paved area.

3.26 RIBBON MIXER/BLENDER

3.26.1 Information Summary

Unit Description: This unit is essentially a mixing chamber, approximately 7 feet long by 4 feet wide and 3 feet high. The chamber is equipped with a removable cover and is mounted on 4-foot high steel legs. It is located in the bermed drum pumping area, just north of AGT 33. The unit has been used to solidify heavy wastes that could not go to Systech due to high viscosity. A forklift lifted 55-gallon drums and dumped their contents into the top of the chamber. For waste solidification, the viscous wastes were mixed with vermiculite. The mixture was subsequently added to open-top 55-gallon drums through an opening in the bottom of the mixer. The drums were sealed and stored in this bermed area pending shipment to Casmalia for land disposal. According to facility personnel, this unit has not been used since November 1986 (11).

Date of Startup: The exact date of startup is unknown, but is believed to be some time between 1982 and 1984.

Date of Closure: The unit remains on-site, but has not been used since November 1986 (11). According to Rho-Chem's 1988 Operation Plan, the ribbon mixer will be used again in future waste handling operations (8).

Wastes Managed: This unit was used to mix viscous or non-pumpable wastes (e.g., paint sludges) with vermiculite to create a solidified waste "suitable for landfilling." The mixture was then placed into open top 55-gallon drums, sealed, and shipped to Casmalia landfill. During the VSI, the following figures were provided: in 1984, 180 drums were shipped to Casmalia; in 1985, 633 drums; and in 1986, 847 drums (11).

Release Controls: The mixing chamber is equipped with a removable lid. However, it appears that the lid could not be in place during waste transfer from the 55-gallon drums (see Air Release Potential below). The unit is located in a concrete-paved bermed area.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.26.2 Conclusions

Soil/Groundwater Release Potential: There is low to moderate potential for past releases to soil and groundwater. Although the unit is located on a concrete-paved surface, some cracks and stains in and on the concrete were noted during the VSI. There is no potential for ongoing releases from the unit to soil/groundwater because the unit is not currently in use.

Surface Water Release Potential: There is low potential for past releases to surface water because the topography of the surrounding area is flat and because the unit is located in a bermed area. There is no potential for ongoing releases because the unit is not currently in use.

Air Release Potential: There is moderate potential for past releases to air because the unit must be uncovered during transfer of wastes from 55-gallon drums to the mixing chamber. There is no potential for ongoing releases because the unit is not currently in use.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases because the unit is located above-ground on a concrete-paved area. There is no potential for ongoing releases because the unit is not currently in use.

3.27 FORMER LABORATORY

3.27.1 Information Summary

Unit Description: This unit was located in the building along the western boundary of the facility (see Figure 2). The lab facilities were used for analyzing incoming products from the mid-1950s to 1968. Facility personnel could not supply any additional information information regarding this unit (11, 34).

Date of Startup: The exact startup date is unknown but is believed to be some time in the mid-1950s (11).

Date of Closure: The laboratory moved to its current location in the northeast portion of the facility in 1968 (11).

Wastes Managed: The unit handled samples of the virgin solvents received by the facility. According to information supplied during the VSI, incoming waste solvents were not analyzed in the former lab. The current facility personnel were unable to elaborate methods of handling the lab waste generated from analysis of virgin solvent samples (11).

Release Controls: No release controls are described in the files reviewed.

History of Releases: No records of releases from this unit were found in the documents reviewed.

3.27.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past releases to soil and groundwater because the unit was located above-ground in a building. There is no potential for ongoing releases because the unit does not currently exist.

Surface Water Release Potential: There is low potential for past releases to surface water because the topography of the surrounding area is flat and because the unit was located in a building. There is no potential for ongoing releases because the unit does not currently exist.

Air Release Potential: There is low potential for past releases to air because the unit was located in a building. There is no potential for ongoing releases because the unit does not currently exist.

Subsurface Gas Release Potential: There is low potential for past subsurface gas releases because the unit was located above-ground in a building. There is no potential for ongoing releases because the unit does not currently exist.

3.28 CURRENT LABORATORY

3.28.1 Information Summary

Unit Description: This lab is located in the northeast portion of the site. The lab facilities include a hood, a Shimadzu gas chromatograph with electron capture detector for PCB analysis, a gas chromatograph (GC), an infra red spectrophotometer for analysis of incoming and outgoing products, a GC/MS for analysis of incoming waste solvents, an ICP analyzer for metal scans, a bomb calorimeter for BTU determinations on flammable waste solvent fuel blends, and other assorted analytical equipment. Rho-Chem personnel collect 4-ounce samples from each drum of incoming waste solvents for analysis in the on-site laboratory. An aliquot of waste is removed from each 4-ounce glass bottle and transferred to a small vial under a hood. The vials are then loaded onto an automatic sampler. The contents of each vial are aspirated and analyzed in the GC/MS, which provides analytical verification of the contents of each drum. Some residual liquid remains in the vials after sample aspiration, so the vials are packed in drums with various non-pumpable residues and shipped to Marine Shale for incineration. The original sample bottles are stored in a cabinet under the hood for three or four days; the bottles are then moved to the warehouse and the residual waste solvents are transferred to a drum of mixed waste solvents. Incoming virgin solvents and outgoing Rho-Chem products are also analyzed in the laboratory for quality control purposes. Glass bottles with samples of these products are stored in a steel cabinet in the lab for several months. The samples are eventually added to various mixed solvent blends (11). File information from the Los Angeles County Sanitation District (District) indicates that lab sinks are to be used for domestic purposes only (e.g., hand-washing) and that the only industrial wastewater discharges permitted by the District are cooling tower blowdown and boiler blowdown (62, 65).

Date of Startup: The current laboratory began operation in 1968.

Date of Closure: The unit is currently active.

Wastes Managed: The unit handles samples of the wastes received by the facility and analyzes blends of flammable waste solvents for BTU content.

Release Controls: The laboratory is located in a building on the northern portion of the site. Transfer of waste solvents from the 4-ounce sample bottles to the analytical vials is performed under a hood.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.28.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past and ongoing releases to soil and groundwater because the unit is located above-ground in a building.

Surface Water Release Potential: There is low potential for past and

ongoing releases to surface water because the topography of the surrounding area is flat and because the unit is located in a building.

Air Release Potential: There is low potential for past and ongoing releases to air because the unit is located in a building and because waste transfer activities occur under a hood.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the unit is located above-ground in a building.

3.29 INCOMING DRUM STORAGE AREA II/CONSOLIDATED SOLIDS STORAGE AREA

3.29.1 Information Summary

Unit Description: The unit is located in the combined middle and south warehouses (the wall that had separated the two warehouses was removed to create one large warehouse). The warehouse has loading doors and ramps on the east, south, and west sides of the building. The ramps slope about 3 to 6 inches downward to the concrete floor of the warehouse and 3 to 6 inches downward to the outside, in effect creating a berm along each doorway (see photos in Appendix D). Incoming drums of wastes are off-loaded from Rho-Chem trucks and stored in the northern portion of the large warehouse. This area has a 425-drum storage capacity. Rho-Chem personnel collect 4-ounce samples from each drum of waste liquids for specific gravity determinations and GC/MS analyses in the on-site laboratory (Unit 3.28). The incoming drums are stored in this location pending analytical verification of the contents of each drum. The drums are then moved with forklifts to the drum pumping area (Unit 3.15). On the day of the VSI, no drums had been received, so the northern portion of the large warehouse was empty. Incoming drums containing solids or non-pumpable wastes are handled somewhat differently than drums of liquid wastes. Rho-Chem personnel open the tops of the drums to visually inspect the contents. If a liquid layer is observed, it is pumped off to AGT 38 (the storage tank for mixed flammable waste solvents with small amounts of chlorinated waste solvents). Partially-full drums are grouped together for consolidation. Full drums of solid wastes are stored in the southeast corner of the warehouse pending shipment to Marine Shale for incineration. During the VSI, approximately 50 such drums stacked three-high were observed in that portion of the warehouse. The southern portion of the warehouse is used to store 55-gallon drums of a mixture of perchloroethylene and n-butyl alcohol received from a flexography business. Facility personnel stated that these drums are stored in this portion of the warehouse for approximately two to three months until a 2500-gallon batch is accumulated for treatment in the thin film evaporator (11).

Date of Startup: The unit became active some time in January 1988 (28).

Date of Closure: The unit is currently active.

Wastes Managed: This unit receives all types of wastes currently received at the facility. This includes both recyclable and non-recyclable wastes. Drums of consolidated solid hazardous waste are stored in the southeastern corner of the large warehouse pending shipment to Marine Shale for incineration (11, 28). Additionally, crushed empty drums that had previously contained waste solvents are accumulated in this area pending off-site disposal at Casmalia (63).

Release Controls: The drum storage area is completely enclosed in a building. The floor of the warehouse appears to be sunken three to six inches below grade to provide containment for spills (11).

History of Releases: No records of releases from this unit were found in documents reviewed or in discussions with current facility personnel.

3.29.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past and ongoing releases to soil and groundwater because the unit is located above-ground in a building.

Surface Water Release Potential: There is low potential for past and ongoing releases to surface water because the topography of the surrounding area is flat and because the unit is located in a building.

Air Release Potential: There is low potential for past and ongoing releases to air because the unit is located in a building.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the unit is located above-ground in a building.

3.30 EMPTY DRUM STEAM CLEANING AREA

3.30.1 Information Summary

Unit Description: The existence of this unit was reported by the Los Angeles County Sanitation District (District) in 1981. No other information regarding this unit was found in the files reviewed. During the VSI and follow-up phone conversations, facility personnel stated repeatedly that a drum steam-cleaning unit never operated on-site (11, 35, 36). However, the District inspector reiterated the existence of the unit in several phone conversations (37, 38). The District inspector provided the following description of the drum cleaning operation: Empty drums were cleaned in the warehouse. A steam wand and hose connected to the boiler provided hot water to flush residual solvents out of 55-gallon drums. The drums were inverted over a floor drain in the warehouse to empty out the rinsate. The drain lead to a sump (see Unit 3.35) that was located at the western edge of the warehouse. The contents of the sump subsequently flowed into the sanitary sewer. According to the District inspector, Rho-Chem personnel had informed him that the drum steam cleaning operation was a service for their smaller customers only; dirty drums from large customers were sent to Superior Drum for reconditioning. The inspector informed Rho-Chem personnel that this type of operation had to be regulated under an industrial wastewater discharge permit. According to the inspector, Rho-Chem stopped the steam cleaning operation and plugged the floor drain in the warehouse (37).

Date of Startup: The date of startup is unknown.

Date of Closure: The date of closure appears to be sometime in 1982.

Wastes Managed: According to District files and conversations with the District inspector, the unit was used to clean drums that had previously contained solvents. According to Rho-Chem personnel, no such activities had ever occurred on-site.

Release Controls: No release controls are described in the files reviewed.

History of Releases: No records of releases from this unit were found in the documents reviewed.

3.30.2 Conclusions

Currently there is conflicting information as to whether or not a drum steam-cleaning unit ever operated at Rho-Chem. Additional information on the history and specifics of such an operation needs to be obtained to determine if release potentials to environmental media existed. As this unit does not currently exist, there is no potential for ongoing releases.

3.31 DRUM PUMPING AREA RAINWATER AND SPILL COLLECTION SUMP

3.31.1 Information Summary

Unit Description: This unit is located in the northeastern corner of the bermed Incoming Drum Storage Area I/Current Drum Pumping Area (Unit 3.15). This area is sloped to direct spills and rainwater to the sump. The 10-foot long by 8-inch wide by 6-inch deep sump is concrete-lined and covered with a metal grate. An above-ground metal pipe, approximately 75 feet long, is mounted on the north and east berm wall. One open end of this pipe is located in the eastern-most portion of the sump. The west end of the pipe is also open and can be attached to a pump when the sump needs to be emptied. Liquid from the sump is then pumped into AGT 42 for storage pending shipment to Romic (11).

Date of Startup: The sump was constructed in 1982 or 1983 when the berm around the drum pumping area was installed (11).

Date of Closure: The unit is currently active.

Wastes Managed: The sump has been used to collect rainwater runoff in the Incoming Drum Storage Area I/Current Drum Pumping Area, but could also collect waste solvent spills in that area. Though the exact composition of water in the collected in the sump is unknown, the contents of the sump are pumped into AGT 42 because small amounts of solvent may be entrained in the rainwater.

Release Controls: The sump is concrete-lined. Any liquids collecting in the sump are pumped to AGT 42.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel. No liquid was observed in the sump during the VSI.

3.31.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past and ongoing releases to soil and groundwater because the contents of the sump are pumped out to AGT 42 as needed and because the 6-inch depth of the sump limits the volume of liquid that can be collected to approximately 25 gallons.

Surface Water Release Potential: There is low potential for past and ongoing releases to surface water because the sump is located within a bermed area and the topography of the surrounding area is flat.

Air Release Potential: There is low potential for past and ongoing releases to air because the sump receives primarily rainwater runoff, which is subsequently pumped to AGT 42.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the sump receives primarily rainwater runoff, which is subsequently pumped to AGT 42.

3.32 WASTE LIQUID FILTRATION AND PUMPING SYSTEM

3.32.1 Information Summary

Unit Description: This unit is a small rectangular above-ground tank located in the bermed drum pumping area, just north of AGT 34. The tank is approximately 4 feet by three feet by two feet and has a removable cover. A nylon window screen is situated at a downward angle in the top portion of the tank. The contents of the incoming 55-gallon drums are pumped into the top of this tank enroute to the appropriate storage tank (AGTs 33-42) to filter out any solids that may be present. The separated solids are scraped off the screen and added to drums of solids for shipment to Marine Shale for incineration. The filtered waste solvent is pumped out of the bottom of the tank and into an inlet valve that leads to the storage tank dedicated to a particular waste type (11).

Date of Startup: The exact date of startup is unknown, but is believed to be in 1982 when AGTs 33-42 were first used.

Date of Closure: This is an active unit.

Wastes Managed: This unit filters all incoming waste solvent liquids.

Release Controls: The tank is located in a concrete-paved bermed area and is covered during during waste pumping operations.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.32.1 Conclusions

Soil/Groundwater Release Potential: There is low to moderate potential for past and ongoing releases to soil and groundwater. Although the unit is located on a concrete-paved area, some cracks and stains in and on the concrete were noted during the VSI.

Surface Water Release Potential: There is low potential for past and ongoing releases to surface water because the topography of the surrounding area is flat and because the unit is located in a concrete-paved bermed area.

Air Release Potential: There is low potential for past and ongoing releases to air because the unit is covered during waste solvent pumping operations.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the unit is located above-ground in a concrete-paved bermed area.

3.33 AGT 61

3.33.1 Information Summary

Unit Description: This unlined AGT has a 4200-gallon capacity. It is located on the northwest/north-central portion of the facility, just west of the fractionation column. According to a Rho-Chem consultant, the tank was intended to serve as a surge tank to receive cuts of various ketones from the reboiler/fractionation column (19). SCAQMD regulates this AGT under Permit # M51473, along with the reboiler/fractionation column and several other AGTs (9). Some time after 1986, Rho-Chem began using this AGT for storage of wash wastewater pending treatment in the reboiler/fractionation column (Unit 3.24). Wash wastewater is pumped into AGT 61 from AGT 79 (wash wastewater surge tank, part of Unit 3.23) through overhead piping. It is stored in AGT 61 until enough accumulates to treat a batch (about 3800 gallons) in the reboiler. The wash wastewater is then piped directly to the reboiler for treatment (20).

Date of Startup: The exact date of startup is unknown, but is believed to be in some time in 1986 or 1987. Process flow diagrams submitted by Rho-Chem to SCAQMD and DOHS (in 1985 and 1986, respectively) indicated that AGT 61 received cuts of various ketones as they came off the reboiler/fractionation column. According to those diagrams, the wash wastewater was routed to AGT 34. Facility personnel indicated that this former process flow was in effect for a short time only, but could not provide specific dates (7, 36).

Date of Closure: The unit is currently active.

Wastes Managed: The unit currently stores wash wastewater, a mixture of water and dissolved water soluble solvents. Though these typically may be alcohols, ketones, etc., methylene chloride may also be found due to its relative miscibility in water (11, 20, 36). Other chlorinated solvents and heavy metals have been found in the wash wastewater as well. An analysis of the contents of AGT 61 may be found in Appendix G (66).

Release Controls: This unlined tank is located in a concrete-paved bermed area. The tank is equipped with a two-way vacuum-pressure relief vent.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.33.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past and ongoing releases to soil and groundwater because the unit is located above-ground on a concrete-paved area.

Surface Water Release Potential: There is low potential for past and ongoing releases to surface water because the topography of the surrounding area is flat and because the unit is located in a bermed area.

Air Release Potential: There is low potential for past and ongoing releases to air because the unit is operated as a closed system.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the unit is located above-ground on a concrete-paved area.

3.34 AGT 64

3.34.1 Information Summary

Unit Description: This unlined AGT has a 4000-gallon capacity. It is located on the north-central portion of the facility, just west of AGT 65. According to a Rho-Chem consultant, the tank was intended to serve as a surge tank to receive cuts of various high boiling aromatic solvents from the reboiler/fractionation column (19). SCAQMD regulates this AGT under Permit # M51473, along with the reboiler/fractionation column and several other AGTs (9). Some time after 1986, Rho-Chem began using this AGT as a holding tank for treated wash water pending GC analysis. When wash wastewater is treated in the reboiler, the water soluble solvents come off the column first. The water remaining in the reboiler is subsequently boiled over "to remove color" and is piped to AGT 64 (20). A sample of the contents of AGT 64 is collected and analyzed by GC to make sure that the recycled water has been adequately treated. According to Chet Early, plant manager at Rho-Chem, the on-site lab analysis results have not shown any residual solvents remaining in the recycled water. However, he also stated that analysis results from an outside lab showed a "small amount" (about three ppm) of methylene chloride (36). The treated water is piped to AGT 60 for storage pending reuse in the wash tank (AGT 78, part of Unit 3.23).

Date of Startup: The exact date of startup is unknown, but is believed to be in some time in 1986 or 1987. Process flow diagrams submitted by Rho-Chem to SCAQMD and DOHS (in 1985 and 1986, respectively) indicated that AGT 64 received cuts of various high boiling aromatic solvents as they came off the reboiler/fractionation column. Facility personnel indicated that this former process flow was in effect for a short time only, but could not provide specific dates (7, 36).

Date of Closure: The unit is currently active.

Wastes Managed: The unit currently stores treated wash wastewater pending a GC analysis to asses the purity of the recycled water. The treated wash water may contain small amounts of dissolved water soluble solvents. Though these typically may be alcohols, ketones, etc., small amounts of methylene chloride (3 ppm) may also be found (36).

Release Controls: This unlined tank is located in a concrete-paved bermed area. The tank is equipped with a two-way vacuum-pressure relief vent.

History of Releases: No records of releases from this unit were found in the documents reviewed or in discussions with current facility personnel.

3.34.2 Conclusions

Soil/Groundwater Release Potential: There is low potential for past and ongoing releases to soil and groundwater because the unit is located above-ground on a concrete-paved area.

Surface Water Release Potential: There is low potential for past and ongoing releases to surface water because the topography of the surrounding area is flat and because the unit is located in a bermed area.

Air Release Potential: There is low potential for past and ongoing releases to air because the unit is operated as a closed system.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the unit is located above-ground on a concrete-paved area.

3.35 FORMER YARD SUMP

3.35.1 Information Summary

Description: Very little information regarding this unit is known. No information pertaining to this sump was found in the files reviewed. However, an inspector for the Los Angeles County Sanitation District (District) indicated that this sump was located at the western edge of the middle warehouse. He stated that he had been told by the plant manager that the floor drain in the warehouse that served the drum steam-cleaning operation lead to this sump (38). According to Ernest Roehl (company president), the sump existed but was not connected to the floor drain in the warehouse. He stated that the sump was approximately 2 feet by 2 feet by 2 feet and received wash water from washing the exteriors of Rho-Chem delivery trucks and rainwater runoff from the yard. He indicated that the contents of the sump were pumped out to the south driveway which slopes toward Isis Avenue. He also stated that the sump was filled in with concrete several years ago (35).

Startup Date: The startup date is unknown.

Closure Date: The exact closure date is unknown but is believed to be sometime in 1983 (35).

Wastes Managed: According to the District inspector, the sump received solvent-containing rinsewater from the drum steam-cleaning operation. According to the president of the company, the sump never received such a waste because the company never cleaned any drums (35, 38).

Release Controls: Whether or not this unit had any release controls is not currently known.

History of Releases: According to the company president, the contents of the sump (wash water from truck exteriors and rainwater runoff from the yard) were routinely pumped to the storm drain (35).

3.35.2 Conclusions

Currently there is conflicting information as to whether or not a drum steam-cleaning unit ever operated at Rho-Chem and whether or not wastewater from such an operation discharged to the sump. Additional information on the history and specifics of such an operation needs to be obtained to determine if release potentials to environmental media existed. As this unit no longer exists, there is no potential for ongoing releases.

3.36 EMPTY USED DRUM STORAGE AREA

3.36.1 Information Summary

Unit Description: The empty used drum storage area is located in the northeastern corner of the bermed drum pumping area (Unit 3.15). Empty used drums have been stored here since at least 1980. It has been designated as a separate SWMU because photo-ionization detector measurements taken during the VSI gave qualitative evidence of a release to air (see Potential to Release to Air below). Additionally, the area is not currently regulated by SCAQMD as a source of air emissions. Approximately 200 empty drums were observed in this area during the VSI. The drums were stored horizontally and stacked up to five or six high in two large piles (see Appendix D photographs). The bottom layer of drums in one pile rested directly on the concrete base of the bermed area (e.g., they were not stored on pallets). This pile partially covered the grating that overlies the rainwater and spill collection sump (Unit 3.31). Most of the drums were sealed. However, at least four were partially or completely open; three had open bung holes and one open-head drum lacked a lid. FIT also observed evidence of a spill (vermiculite that had absorbed liquid) beneath the open drum (see Appendix D photographs) (11).

According to facility personnel, the area can store 500 to 600 empty used drums. Those that are suitable for reconditioning are picked up by Cooper or Pacific Coast Drum (registered used drum reconditioners) once or twice per week. Approximately 200 to 250 drums are taken off-site with each pick-up. Empty drums that are damaged (and therefore unsuitable for reconditioning) are also accumulated in this area. At 6-week to 2-month intervals, PFR Company brings a portable drum crusher to crush the damaged drums. The crushed drums are then moved to the consolidated solids storage area in the south warehouse (Unit 3.29). They are stored on the floor of the warehouse until enough drums (at least 300) have accumulated to fill a roll-off bin. Rho-Chem uses Nash Salvage Company to transport the bin to Casmalia (63).

Date of Startup: The exact startup date is unknown, but is believed to be some time in 1967, when the unbermed Incoming Drum Storage Area I was initially used. Berms were constructed around the entire incoming drum storage area in 1982 (the empty drums are stored in the eastern portion of this area).

Date of Closure: The unit is currently active.

Wastes Managed: The empty drums are assumed to contain residues of the various types of waste solvents received by Rho-Chem.

Release Controls: Prior to 1982, the area was concrete-paved but not bermed. Berms were built around the entire incoming waste drum storage area in 1982. The empty drum storage area is located in the eastern third of this bermed area. Most of the empty drums are stored closed, although several partially or completely open drums were observed during the VSI.

History of Releases: No records of releases from this unit were found in the files reviewed. However, during the VSI, the photo-ionization detector gave a reading of 10 ppm. The probe was placed in between several of the empty drums in the pile of drums that was resting on top of the sump grating (11).

3.36.2 Conclusions

Soil/Groundwater Release Potential: There is low to moderate potential for past and ongoing releases to soil and groundwater. Although the empty drums are located on a concrete-paved surface, some cracks and stains in and on the concrete were noted during the VSI. FIT also observed evidence of a spill (vermiculite that had absorbed liquid) beneath an open drum at the base of one of the piles (see Appendix D photographs) (11).

Surface Water Release Potential: There is low to moderate potential for past releases to surface water because the unit was not bermed until 1982. Although the topography of the surrounding area is flat, yard runoff with entrained solvents could have entered the storm drain system and released to San Pedro Bay via the Dominguez Channel. There is low potential for ongoing releases to surface water via that route because the area has been bermed since 1982.

Air Release Potential: There was a documented air release from this unit during the VSI. The photo-ionization detector registered a reading of approximately 10 ppm when the probe was placed in between several drums in this unit. Once FIT moved away from this area, the reading dropped to below 1 ppm (11). There is a moderate potential for past and ongoing releases to air from the empty drum storage area due to the large number of drums (400-500) that are handled there each week.

Subsurface Gas Release Potential: There is low potential for past and ongoing subsurface gas releases because the unit is located above-ground.

4. ENVIRONMENTAL SETTING

4.1 PHYSICAL SURROUNDINGS

Rho-Chem Corporation is located on approximately 1.1 acres in a light industrial area. Isis Avenue, a north-south arterial along the eastern boundary of the facility, is the only access road to the site.

The immediate area is zoned M-1 for industrial use (1). A number of small businesses also operate in the the vicinity of Rho-Chem between Hillcrest Avenue and Manchester Boulevard (39). The Northrup Institute of Technology, a 4-year school with an enrollment of 2,200, is located approximately 0.25 miles south of the site (39, 40). A residential neighborhood lies approximately 0.40 miles south of the site (39). Los Angeles International Airport lies approximately 1.1 miles to the southwest (41, 42).

The topography of the surrounding area is generally flat and slopes gently to the southeast. Site elevation is approximately 100 feet above mean sea level (41, 42). The site does not lie within the 100-year flood plain (1).

The climate of the Los Angeles area is Mediterranean, characterized by warm, dry summers and cool, moist winters (43). Net precipitation from November to April is -0.2 inches (44). The 1-year, 24-hour rainfall is 3 inches (45).

4.2 GEOLOGY

The Rho-Chem site is located in the West Coast Basin. The basin is bounded on the east by the Newport-Inglewood Uplift, on the north by the Ballona Escarpment, on the west by Santa Monica Bay, and on the south by the Palos Verdes Hills and San Pedro Bay. The Gardena Syncline, a large fold, underlies most of the basin and roughly parallels the Newport-Inglewood Uplift (47). The Newport-Inglewood Uplift is a complex system of faults which trends to the northwest. Regionally the area is underlain by Pleistocene semi-consolidated to unconsolidated alluvial and shallow marine sediments, which overlie Tertiary fine grained sediments primarily of marine origin. The Tertiary sediments occur at depths greater than 600 feet below the site (46). The Pico Formation is the uppermost Tertiary unit which underlies the Pleistocene sedimentary units. The sediments that comprise the Pico Formation and lower Tertiary units are siltstone and shale with varying amounts of sandstone and conglomerate.

Uncomformably overlying the Pliocene Pico Formation, is the Lower Pleistocene San Pedro Formation. This unit is approximately 300 to 500 feet thick below the site and is composed primarily of sand and gravel separated by intervals of silt and clay that were deposited in both shallow marine and alluvial environments (46). The upper Pleistocene Lakewood Formation overlies the San Pedro Formation. The Lakewood Formation is approximately 150 to 250 feet thick, and contains mixed alluvial deposits composed of gravel, sand, sandy silt, and silt and clay deposits (46). Beneath the site to a depth 100 feet, the upper Lakewood Formation contains

undifferentiated Quarternary deposits. The uppermost 30 to 35 feet of sediments below the site, contained within the Lakewood Formation, are composed of silty sands which grade into silty clay and clay at greater depths (24, 46).

4.3 HYDROLOGY

4.3.1 Surface Water

Rho-Chem lies approximately 4 miles east of Santa Monica Bay. The closest surface water body is Centinela Creek, a concrete-lined storm drain channel that lies approximately 1.5 miles north of the site. This creek flows into Ballona Creek, approximately 3.5 miles northwest of the site. Ballona Creek ultimately enters Santa Monica Bay at a point approximately 4.5 miles northwest of the facility (41, 42). The eastern portion of the creek is cement-lined and collects stormwater runoff. The western 1.5 miles of the creek is unlined; beneficial uses of the western portion of this creek include fishing and sculling. The Ballona Wetlands extend from the unlined portion of the creek southward and eastward to slightly beyond Culver Boulevard and westward to Vista del Mar (61). The eastern edge of the wetlands is approximately 4 miles from the site (41). Additionally, the northern terminus of Dominguez Channel (a storm drain operated by the Los Angeles County Department of Public Works) is approximately three miles southeast of the site. This channel receives surface runoff from the storm drain beneath Isis Avenue and eventually empties into San Pedro Bay (62).

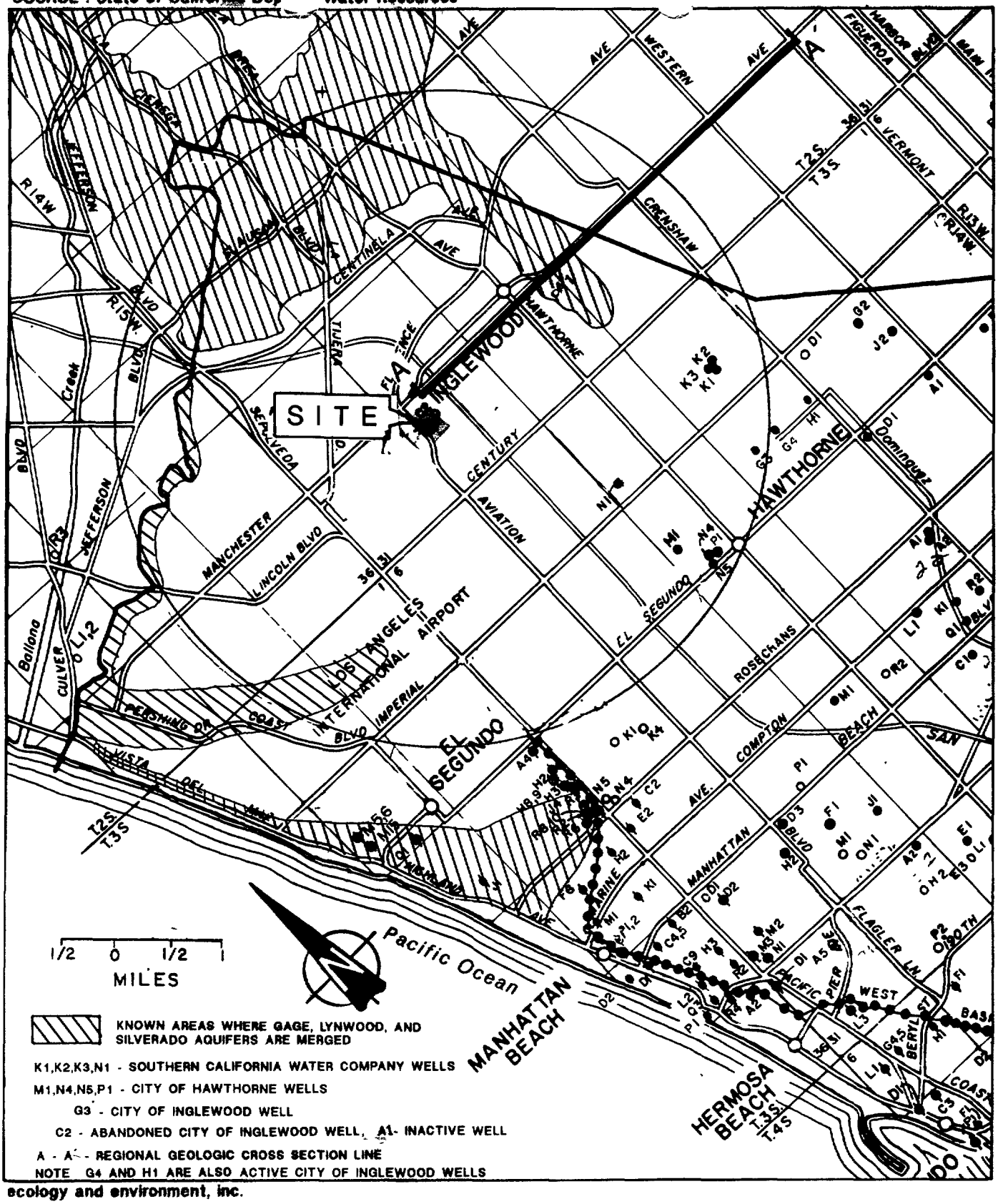
4.3.2 Groundwater

The Rho-Chem site is located within the northeastern portion of the West Coast Groundwater Basin. The 160 square-mile basin is bounded on all sides by physiographic and geologic features (primarily regionally extensive faulted and folded geologic structures) which form groundwater divide areas and separate the West Coast Groundwater Basin to the north from the Santa Monica Groundwater Basin, and to the east from the Central Groundwater Basin. The respective groundwater basins are separated by the Ballona Escarpment and Baldwin Hills to the north, the Newport-Inglewood Uplift to the east.

The upper 600 to 1000 feet of sediments in the West Coast Basin, encompassing all of the San Pedro Formation and Lakewood Formation, contain the primary drinking water aquifers. The depths and thicknesses of these aquifers vary across the basin (46). The major aquifers of concern from oldest to youngest (deep to shallow) are: the Silverado, Lynwood, and Gage Aquifers (see Figures 7 and 8, location map of regional geologic cross section A-A' and cross section A-A', respectively) (46, 48). Most of these aquifers are separated by regionally extensive aquitards or low permeability units. However, Figure 7 indicates areas within a 2-mile radius of the Rho-Chem site where all of these aquifers merge and are hydraulically connected (46). Since there is no soil boring data from the site below a depth of 50 feet, the subsurface site geology and degree of hydraulic continuity between various aquifers at depth is undetermined.

In the site vicinity, the Lakewood Formation is known to contain undifferentiated Quaternary deposits, the Bellflower Aquiclude and Gage

SOURCE : State of California Dep Water Resources



ecology and environment, inc.

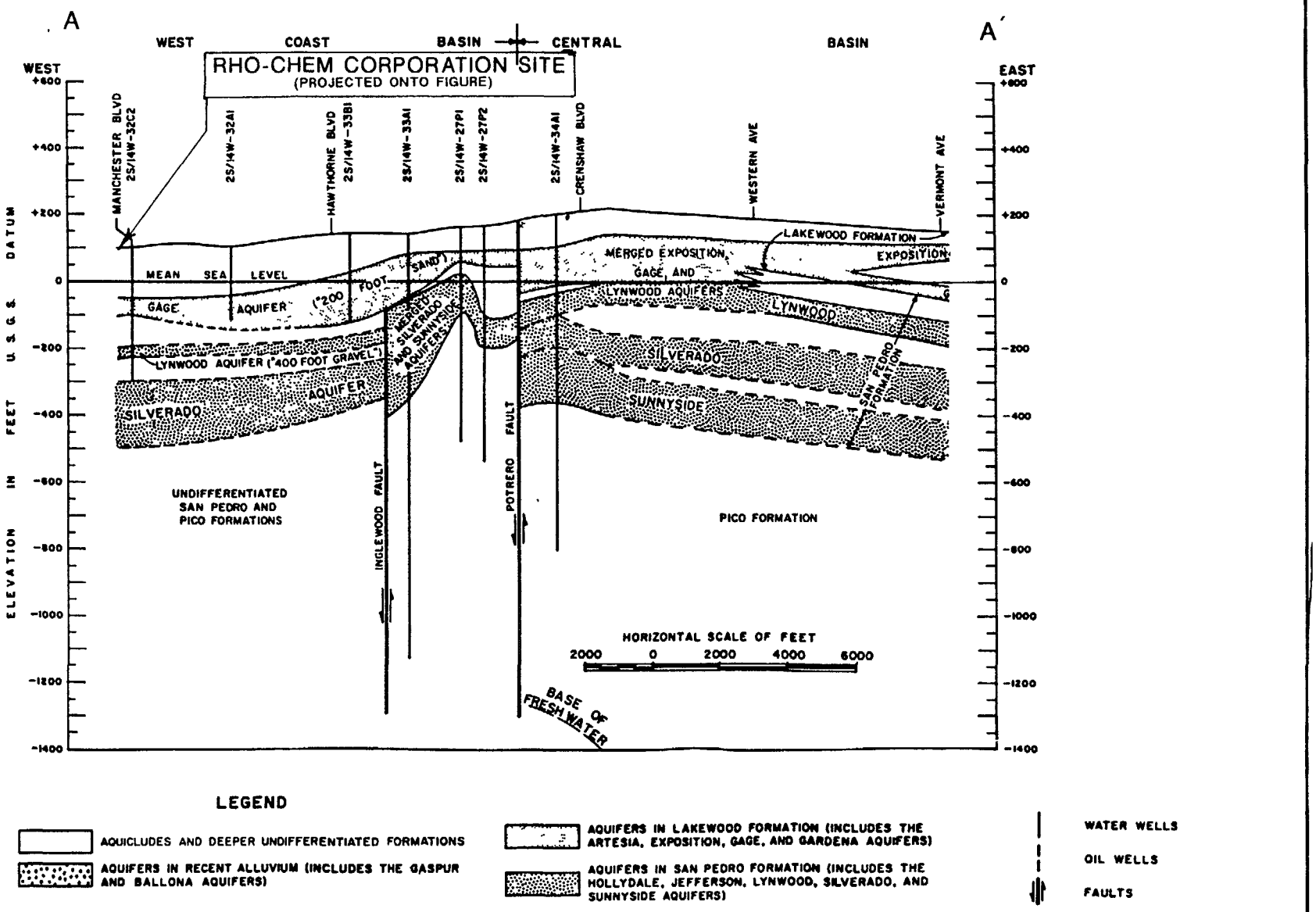
FIGURE 7

LOCATION OF REGIONAL GEOLOGIC CROSS SECTION A - A'

and MUNICIPAL WELLS WITHIN 3 MILES OF RHO-CHEM CORPORATION

INGLEWOOD, CALIFORNIA

SOURCE: State of California Dept. of Water Resources



ecology and environment, inc.

FIGURE 8
REGIONAL GEOLOGIC CROSS SECTION NEAR RHO-CHEM CORPORATION

Aquifer. The undifferentiated Quaternary deposits extend from the ground surface to approximately 100 feet below the site (24, 46). This unit is composed of a heterogeneous mixture of fine-grained continental, marine, and wind-blown sediments. The Bellflower Aquiclude underlies the undifferentiated Quaternary deposits, and is approximately 40 to 50 feet thick in the site vicinity. The Gage Aquifer underlies the Bellflower Aquiclude at a depth of 150 feet below the site, and is approximately 50 feet thick. The Gage Aquifer is the basal member of the Lakewood Formation (46). Depth to the uppermost unconfined groundwater below the site is unknown since there are no monitor wells installed within the uppermost water bearing units. Regional water level information from the West Coast Groundwater Basin indicates that the Bellflower unit is the uppermost water bearing unit and contains small quantities of groundwater (46).

The San Pedro Formation contains the Lynwood and Silverado Aquifers which are the primary drinking water aquifers in the site vicinity. The Lynwood Aquifer underlies the Gage Aquifer at a depth of 300 feet below ground surface, and is approximately 50 feet thick. The Lynwood Aquifer is separated from the Gage Aquifer by a lower permeability unit which is 50 to 100 feet thick. The Silverado Aquifer underlies the Lynwood Aquifer at a depth of approximately 400 feet, and is roughly 200 feet in thickness in the vicinity of the site. (46).

Nine active municipal drinking water wells occur within three miles of the site (see Figure 7) and serve residents in Inglewood, Hawthorne, and Lennox (48, 53). All wells are reportedly perforated in the Silverado Aquifer. The City of Inglewood's municipal water supply is derived from a combination of surface water (60%) obtained from the Metropolitan Water District of Southern California (MWD) and groundwater (40%) obtained from the City's three municipal wells. Only one of these wells is within three miles of the site. However, the blended water is distributed throughout the system and serves a population of 102,888 (49, 50). The City of Hawthorne operates four municipal wells and distributes a blend of 20% groundwater and 80% surface water to 35,000 residents (51). The Southern California Water Company operates four wells that supply water to approximately 40,000 residents in Lennox and Hawthorne. Groundwater from three of the four wells is blended with surface water prior to distribution; water from the fourth well is distributed without blending. The latter is 1.75 miles southeast of Rho-Chem and is the closest municipal well to the site (41, 42, 52).

5. SUMMARY OF FIT VISUAL SITE INSPECTION

The Visual Site Inspection (VSI) of the Rho-Chem Corporation facility was conducted on June 29, 1988. The inspection began at approximately 9:30 A.M. with a preliminary meeting in the office Ernest Roehl, president of the company. The following members of Ecology and Environment Inc.'s Field Investigation Team (FIT) were present: Sandra Szabat (Team Leader), Mary Hourigan (Site Safety Officer), and Chris Lichens. Julie Diridoni, a member of ICF Corporation's FIT (under contract to E & E), also provided field support. Jim Levy, representing the U.S. EPA, accompanied FIT to provide support regarding RCRA issues and EPA policies. Mr. Roehl was the only Rho-Chem representative present during the preliminary meeting. Jim Levy began the meeting with an explanation of the statutory basis for the RFA process and provided clarification of the purpose of the VSI. Additionally, Mr. Roehl discussed some future plans for Rho-Chem. The preliminary meeting adjourned to the main conference room, at which time we were joined by Chet Early, Bonnie O'Meara, and Mark Sandoval of Rho-Chem. Mr. Ken Chiang, from the Los Angeles DOHS Permit Unit, joined the group a short time later.

FIT members interviewed the Rho-Chem representatives regarding the history, ownership, processes, and waste management practices at Rho-Chem. Most of the morning was spent clarifying the various types of solvent recovery systems that had been operated on-site over the past 24 years and defining the time intervals during which they were used. Additionally, in discussing current waste management techniques, it became apparent that the facility's current waste process flows did not correspond with the information that Rho-Chem had submitted to SCAQMD in 1985 and to DOHS in 1986. Much of the afternoon was spent attempting to clarify the details of past and current waste handling practices at Rho-Chem. Seven new SWMUs and three areas of concern were identified during the VSI.

A site tour of the facility was conducted late in the afternoon following the meeting. Photographs were taken of the entire facility and appear in Appendix D. The tour ended at approximately 6 P.M. Due to the lateness of the hour, Rho-Chem personnel agreed to provide clarification of outstanding issues (e.g., the drum steam cleaning operation) via telephone conversations.

6. HRS FACTORS

The Hazard Ranking System (HRS) was developed for the EPA by the MITRE Corporation to numerically rank hazardous waste sites for placement on the National Priorities List (NPL) under CERCLA. The following HRS Factors, as they apply to Rho-Chem, are listed and described individually in the sections below.

6.1 OBSERVED RELEASE

Currently, no analytical documentation of releases to groundwater, surface water or air exists. Based on review of available file information, the potential for releases appears to be highest for the groundwater and air routes. Additionally, there appears to be a potential for indirect releases to surface water. Therefore the potential for release to these routes is discussed further below.

6.1.1 Potential for Observed Release to Groundwater

Soil contamination has been documented beneath the western portion of the facility by J.H. Kleinfelder & Associates (Kleinfelder). Rho-Chem retained Kleinfelder to implement a mandatory leak detection program for USTs 1-28 beneath the western portion of the facility. This program is required by the California Regional Water Quality Control Board (RWQCB) for all USTs.

In April 1985 Kleinfelder drilled six soil borings in the western portion of the facility to depths of 50 feet (see Figure 5 for locations of soil borings). No groundwater was encountered in any of the borings. The six borings were subsequently completed as vadose zone monitor wells. Kleinfelder monitored the drill cuttings at 5-foot intervals for organic vapors with a photo-ionization detector (PID) The PID provided qualitative evidence of organic vapors in nearly all of the intervals. PID readings ranged from 5 to 950 parts per million (ppm as benzene). Copies of the boring logs, with the corresponding PID readings at each interval, are included as Appendix E (24, 25).

Soil samples from 15 and 30 feet were analyzed for each boring. Additional samples from the 5- and 50-foot levels were analyzed from borings 3, 5, and 6. In general, soils were analyzed for hydrocarbon compounds that had been used at Rho-Chem. All of the borings exhibited some form of hydrocarbon contamination. The highest levels of contamination were detected in borings 3 and 6 at a depth of 5 feet. Concentrations of contaminants generally decreased with depth, although several contaminants in boring 6 were detected at 50 feet but not at 5 feet. Additionally, for borings 1, 2, and 4 FIT noted that chlorinated hydrocarbons were detected at the 30-foot depth but not the 15-foot depth. As mentioned previously, PID readings obtained during drilling showed the presence of organic vapors in each of the six borings. These results may be indicative of subsurface migration of solvents.

Table 3 shows the contaminants detected in borings 3 and 6 at the 5- and 50-foot depths (see Appendix C for the complete analytical data).

TABLE 3

CONTAMINANTS DETECTED IN BORINGS 3 AND 6 AT 5 AND 50 FEET
(concentrations in mg/kg)

Contaminant	Boring 3		Boring 6	
	5 feet	50 feet	5 feet	50 feet
1,1,1-Trichloroethane	8,600	1.8	130	<1
Ethylbenzene	330	--	--	--
Methylene Chloride	170	40	<1	1.4
Tetrachloroethylene	45,000	28	3,600	8.3
Trichloroethylene	2,200	49	36	28
Toluene	10,000	4.5	<1	3.8
Freon 113	120	--	6.4	--
Methyl Cyclohexane	390	--	--	--
Xylene Isomers	920	--	--	--

Source: Kleinfelder, 1985

Kleinfelder concluded that data from the six borings reflect surface spillage and seepage rather than extensive leakage from the USTs (24). In a letter to the Los Angeles RWQCB, Rho-Chem described the source of surface contamination in the area of heaviest contamination (Boring 3). According to a long-time employee, the company engaged in the following practices during the 1950s and early 1960s: The company purchased chlorinated solvents in 55-gallon drums. When bulk deliveries were required, solvents were transferred from the drums to a small bulk delivery truck. The nearly empty drums were inverted onto the soil in the center of the western portion of the site (see Unit 3.2) to drain out residual solvents so that the drums could be used for other purposes. These activities reportedly occurred for about 10 years. According to facility personnel, Boring 3 was drilled in the area in which these solvent disposal activities occurred (10).

The concentration of contaminants detected in Boring 6 decreased from the 5- to 30-foot depths, but then increased at the 50-foot depth. Boring 6 was drilled in the area from which USTs 27-32 were excavated in May 1983 (See Figures 2 and 3). Available file information indicates that the contents of these tanks varied from time to time. UST 27 had been used to store 1,1,1-trichloroethane as well as still bottoms from three solvent recovery systems operated in the late 1970s and early 1980s (4). Contents of the other five tanks included trichloroethylene, tetrachloroethylene, "dock flush" (a mixture of various solvents generated by flushing out transfer hoses), ethyl acetate, diesel, and gasoline (3). Although it cannot be stated conclusively that the contaminants detected originated from USTs 27-32, it should be noted that the contractor responsible for excavating the six USTs tanks reported that at least four of them were seriously corroded (17).

Soil contamination has been documented to depths of 50 feet in six borings at the site. Based on the lab data presented, it seems possible that contamination could be detected at greater depths if deeper borings were to be drilled. Whether or not the groundwater beneath the site has been contaminated is not currently known. None of the six borings reached groundwater so the site-specific depth to groundwater is not known. However, the soil contamination does represent the potential for an observed release to groundwater.

6.1.2 Potential for Observed Release to Air

The above-ground storage tanks for waste solvents, recycled solvents, and virgin solvents are equipped with pressure relief valves that will vent solvent vapors to the atmosphere if the vapor pressure exceeds the set point of the valve (2.2 psi). One such venting occurred on January 25, 1988 during separation of a mixture of 1,1,1-trichloroethane (1,1,1-TCA) and trichlorotrifluoroethane (TF) in the reboiler/fractionation column solvent recovery system. Reportedly, the condenser lacked sufficient cooling water to cool the TF vapors coming off the column. TF vapors thus filled the receiving tank and backed up into AGT 67 D. This caused a vapor build-up in AGT 67 D and activated that tank's pressure relief valve. TF vapor was thereby released to the atmosphere (11, 31, 33).

Rho-Chem implemented its contingency plan to respond to the incident and estimated that approximately 28 gallons of TF were lost during the vapor release. However, air samples were not collected, so the extent of air contamination is not known. Additionally, a Rho-Chem employee reported dizziness at a time concurrent with the TF vapor release from the tank (31). Apparently, the TF vapor dispersed off-site to the south of Rho-Chem. Overhill Farms (the business immediately south of Rho-Chem) called the Inglewood Fire Department to complain of strong odors emanating from Rho-Chem at the time of the release (32). The potential for ongoing releases is considered low provided the condenser is receiving an adequate supply of cooling water.

The empty drum storage area (Unit 3.36), located in the northeastern corner of the bermed drum pumping area, appears to be a source of air emissions at the site. FIT documented an air release from this unit during the VSI. The photo-ionization detector registered a reading of approximately 10 ppm when the probe was placed in between several drums in this unit. Once FIT moved away from this area, the reading dropped to below 1 ppm (11). The area is not currently regulated by SCAQMD as a source of air emissions (9).

Approximately 200 empty drums were observed in this area during the VSI. The drums were stored horizontally and stacked up to five or six high in two large piles. Most of the drums were sealed. However, at least four were partially or completely open; three had open bung holes and one open-head drum lacked a lid. FIT also observed evidence of a spill (vermiculite that had absorbed a dark-colored liquid) beneath the open drum (see Appendix D photographs) (11).

Based on the above observations, it appears that the potential for observed releases to air exists at Rho-Chem.

6.1.3 Potential for Observed Release to Surface Water

Current waste management units are reportedly bermed, so it appears unlikely that contaminated runoff would reach surface waters. However, one incident of potential concern has been documented. On May 10, 1982 the Inglewood Fire Department reported that Rho-Chem dumped a "large amount of perchloroethylene" (perc) into the street gutter. The Fire Department apparently responded to the incident at approximately 5 p.m. and flushed the perc into the sewer with large volumes of water (see Section 6.5) (30). The storm drain beneath Isis Avenue conveys surface runoff to Dominguez Channel, approximately three miles southeast of the site. The channel ultimately drains into San Pedro Bay (59). Therefore, an indirect release of yard runoff (either yard washdown or rainwater with entrained solvents) to surface water appears to be possible.

6.2 DIRECT CONTACT/FIRE AND EXPLOSION

The only access to the site is on the east side of the property via Isis Avenue. The entire site is enclosed as follows: The east side is bounded by the office and warehouse buildings, a concrete block wall mounted with a 6-foot high chain link fence topped with barbed wire, and two gates across the eastern access to the north and south driveways. The two 12-foot high chain link gates on the east side are reportedly locked during non-working hours. Access to the site is also possible through the front office door (facing Isis Avenue), which is locked during non-working hours and is wired to a security alarm system (1). The north side of the facility is bounded by a 12-foot high chain link fence topped with barbed wire. The south side of the site is bordered by a building housing Overhill Farms, while the west side of the site is is bordered by an on-site warehouse and the rear wall of a building on the adjacent property to the west (11, 39). Since the soil on which residual solvents were poured some 25 years ago is now paved, and since the entire site is completely enclosed, the possibility for direct contact does not appear to be likely.

A wide variety of flammable solvents are stored on-site. Rho-Chem has estimated the estimated annual quantity of flammable waste stored and/or treated on-site to be 16.6 million gallons (8). Flammable waste solvents are received primarily in 55-gallon drums, which are currently staged in the combined middle and south warehouses (See Figure 5). Subsequent to waste verification, contents of the drums are pumped to AGTs 38 and 40 on the northeastern portion of the site (11, 28).

Additionally, flammable hazardous substances are being stored in 1-gallon and 55-gallon containers in the south, middle, and north warehouses (54). Inglewood Fire Department personnel inspected Rho-Chem on February 1, 1988, and noted the following violations: storage of flammable liquid containers in excess of 6.5 feet high and storage of flammable and combustible liquids without protection of automatic sprinklers in the warehouses (55, 56). Due to the large quantity of flammables stored and/or treated on-site, and the absence of automatic sprinkler systems in the warehouse, a potential fire hazard appears to exist on-site.

One incident of explosion has been documented on-site. On October 18, 1967, an empty 12,000-gallon tank (number currently unknown) exploded while a workman was cutting a hole in the sidewall with a cutting torch. The tank had previously contained 1,1,1-TCA. Inglewood Fire Department personnel believed that oxygen and a spark from the cutting torch entered the tank and ignited residual vapors of the inhibitors mixed in with the 1,1,1-TCA. These inhibitors amounted to 4.5 percent (by volume) of the 1,1,1-TCA and were identified as butylene oxide, nitromethane, 1,3-dioxolane, isobutyl alcohol, and toluene. The force of the explosion buckled the tank and thrust the lid and the tank pressure relief valve onto adjacent properties. No injuries were reported (57).

6.3 WASTE TYPE/QUANTITY

Rho-Chem has received a wide variety of chlorinated, fluorinated, and flammable waste solvents waste solvents. Former AGTs 39-47 were used to store waste chlorinated solvents in the mid to late 1960s. These AGTs had a combined capacity of 7500 gallons. The tank storage area was not bermed. The current storage capacity is as follows: for incoming waste solvents in AGTs 33-41 and 66, 78,000 gallons; for waste liquids with a high water content in AGT 42, 8,000 gallons; for still bottoms in AGT 29 (prior to blending in AGT 34), 6000 gallons. The current waste storage AGTs are located in a concrete-paved bermed area. However, cracks and stains were noted in and on the concrete pad during the VSI. Therefore the effectiveness of this containment structure may be reduced.

During the first seven months of 1988, the facility received an average of 1,473 drums of waste solvent per month (63). The contents of drums are pumped into AGTs 33-41 and AGT 66. Cracks and stains were noted in the concrete-paved surface of the drum pumping area during the VSI (11).

Rho-Chem also stores virgin and recycled solvents on-site for blending and distribution. The above-ground storage capacity for these materials is currently 1,472,000 gallons. The containment structure for these AGTs appeared to be intact at the time of the VSI.

Rho-Chem has also stored virgin and waste solvents, gasoline, and diesel underground. In the mid-1960s, chlorinated waste solvents were stored in USTs 13, 14, and 19. Additionally, sludge oil was stored in UST 18 in the mid-1950s. The combined waste storage capacity of these USTs was 16,000 gallons. Although these four USTs remain on-site, they are currently empty. Eighteen of the 44 USTs that were on-site at one time have been removed. These tanks and their capacities were as follows: USTs 33-44, formerly used for waste solvent storage, had a combined capacity of 65,000 gallons. UST 27, formerly used for still bottom storage, had a capacity of 5,000 gallons. USTs 28-32, formerly used for virgin solvent, gasoline, and diesel storage, had a combined capacity of 25,000 gallons (3, 5). Two new USTs were installed after these tanks were removed, so the total storage capacity for the 28 USTs currently on-site is 1,130,000 gallons (1, 11). However, on the day of the VSI, facility representatives stated that 12 of those 28 were empty. The combined storage capacity of the 16 USTs currently in use is 72,000 gallons (1, 11). None of the current or former USTs described above had any type of secondary containment system.

6.4 GROUNDWATER

Groundwater from nine active municipal wells located within three miles of the site (see Figure 7) is blended with surface water imported from the Metropolitan Water District and serves approximately 177,888 residents in Inglewood, Hawthorne, and Lennox. All wells are reportedly perforated in the Silverado Aquifer (48-53). Depth to water in the vicinity of the site is approximate 150 feet, which is the depth to the aquifer of concern since the uppermost aquifer is hydraulically interconnected with the lower aquifers within two miles of the site (46). The closest municipal well is approximately 1.75 miles southeast of the site (41, 42, 51). Surface soils are moderately permeable (43). Net precipitation from November to April is -0.2 inches (44).

6.5 SURFACE WATER

The closest surface water body to the site is the concrete-lined Centinela Creek, approximately 1.5 miles north of the site. This creek functions as a storm drain and flows into Ballona Creek at a point approximately 3.25 miles northwest of the site (41, 58). Ballona Creek flows into the Pacific Ocean approximately 4.5 miles northwest of the site. The eastern edge of Ballona Wetlands is approximately 4 miles from the site (41). Additionally, the northern terminus of Dominguez Channel (a storm drain operated by the Los Angeles County Department of Public Works) is approximately three miles southeast of the site. This channel receives surface runoff from the storm drain beneath Isis Avenue and eventually empties into San Pedro Bay (42, 59).

Rho-Chem is situated on level ground approximately 100 feet above mean sea level. The topography of the surrounding area is also flat (41, 42). The one-year, 24-hour rainfall in the area is three inches (45). Current waste management units are reportedly bermed, so it appears unlikely that contaminated runoff would reach surface waters. However, one incident of potential concern has been documented (see 6.1.3).

6.6 AIR

All AGTs have two-way vacuum pressure relief valves. These valves are designed to draw air into the tanks when liquids are being withdrawn (to prevent tank collapse) and to vent vapors to the atmosphere if the vapor pressure inside the tanks exceeds 2.2 psi (9). Since all AGTs are equipped with the valves, the potential for observed releases to air exists for product tanks as well as waste tanks. One such venting of trichlorotrifluoroethane (TF) vapors from a product receiving tank occurred on January 25, 1988 (see 6.1.2) (31-33). According to SCAQMD files, Rho-Chem has no record of air violations; however, SCAQMD was not aware of the TF vapor release incident (60, 61).

Although Rho-Chem is located in an area zoned for light industry, the four-mile radius surrounding the site is densely populated. The following cities/communities are totally or partially within four miles of Rho-Chem: Inglewood, Culver City, Hawthorne, El Segundo, Lennox, West Athens, Westmont, Ladera Heights, Fox Hills, View Park, Windsor Hills,

Baldwin Hills, Marina del Rey, Playa del Rey, Westchester, and other portions of the City of Los Angeles. These areas have an estimated combined population of at least 350,000 people (23).

6.7 SUMMARY OF HRS FACTORS

It appears that Rho-Chem could qualify for inclusion on the National Priorities List due to the following factors:

- o documentation of extensive soil contamination with hazardous substances known to have been present on-site;
- o potential to document an observed release to groundwater and evidence of interconnection between the upper aquifers and the aquifer of concern;
- o high groundwater target population;
- o high waste quantity value;
- o moderately high toxicity/persistence value; and
- o potential to document an observed release to air.

7. DRAFT REVISED HRS CONSIDERATIONS

The potential for air releases from the solvent recovery systems, the waste solvent storage tanks, and the empty used drum storage area represent draft revised HRS considerations. Additionally, Ballona Wetlands, a sensitive environment, is approximately four miles northwest of the site.

8. INTERIM MEASURES

Based on the information reviewed during the PR and VSI, there is no evidence to indicate that interim control measures are warranted at Rho-Chem Corporation.

REFERENCES

1. Roehl, Ernest, Rho-Chem to DOHS-Los Angeles, Operation Plan for a Hazardous Waste Facility, July 1983.

2. Szabat, Sandra, FIT and Ernest Roehl, Rho-Chem, telephone conversation, 7-13-88.

3. Inglewood Fire Department, Records of Bulk Inventory of Chemicals, at American Better Chemicals and Rho-Chem, undated.

4. Roehl, Ernest, Rho-Chem to DOHS-Los Angeles, Operation Plan for a Hazardous Waste Facility, Circa 1980.

5. Roehl, Ernest, Rho-Chem. Part A Application for Rho-Chem Corporation, November 14, 1980.

6. Szabat, Sandra, FIT and Bonnie O'Meara, Rho-Chem, telephone conversation, 7-9-88.

7. Szabat, Sandra, FIT and Ernest Roehl, Rho-Chem, telephone conversation, 7-12-88.

8. Johnson, Joseph, JRJ Associates, to DOHS-Los Angeles, Operation Plan for a Hazardous Waste Facility, February 1988.

9. South Coast Air Quality Management District, Permit Files, 1964 to 1988.

10. Roehl, Ernest, Rho-Chem to Joshua Workman, RWQCB, letter, August 28, 1985.

11. FIT Visual Site Inspection at Rho-Chem Corporation, 6-29-88.

12. Inglewood Fire Department, Underground Storage Tank Installation Records, 1956, 1958, 1961, and 1962.

13. Roehl, Ernest, Rho-Chem to California State Water Resources Control Board, Hazardous Substance Storage Statements, October, 1983.

14. DST Builders, Report of Tank Excavation, March 1982.

15. DST Builders, Report of Tank Excavation, May 1983.

16. Rho-Chem Corporation, Facility Map submitted to Inglewood Fire Department, May 1983.

17. Turner, Ralph, DST Builders to Chief Roberts, Inglewood Fire Department, letter, 5-19-83.

18. Roehl, Ernest to John Hinton, DOHS Los Angeles Region, letter, 6-11-86.

j/ss/rho/refs

19. Lee, Don, Consultant to Rho-Chem, to Santander Barros, SCAQMD, Supporting Documentation for facility storage and treatment modifications, submitted September 1985.

20. Szabat, Sandra, FIT and Chet Early, Rho-Chem, telephone conversation, 7-27-88.

21. Hedges, Lynn, SCAQMD, Inspection Report, 5-20-88.

22. Szabat, Sandra, FIT and Chet Early, Rho-Chem, telephone conversation, 7-26-88.

23. Szabat, Sandra, FIT and Terry Bills, Los Angeles County Department of Regional Planning, telephone conversation, 7-8-88.

24. Kleinfelder and Associates, Report of Underground Tank Investigation Rho-Chem Corporation, June 1985.

25. Szabat, Sandra, FIT and Randolph Harris, Kleinfelder and Associates, telephone conversation, 7-31-85.

26. U.S. Environmental Protection Agency, RCRA Facility Assessment Guidance, May 21, 1986.

27. Diagram of Flash Drum Process Flow submitted by American Better Chemical (now Rho-Chem) to Inglewood Fire Department, April 1970.

28. Roehl, Ernest, Rho-Chem to Susan Romero, DOHS Los Angeles Region, letter, 1-29-88.

29. Zarbin, Steve, SCAQMD, Inspection Report, 9-12-84.

30. Potts, Captain Doug, Inglewood Fire Department, Inspection Report, 5-19-82.

31. Sandoval, Mark, Rho-Chem to Mel Knight, DOHS Los Angeles Region, letter and Contingency Plan Implementation Report, 2-2-88.

32. Inglewood Fire Department, Incident Report (computer generated), 1-25-88.

33. Morgan, Captain Paul, Inglewood Fire Department, California Hazardous Materials Incident Report, 2-2-88.

34. Facility Map submitted to Inglewood Fire Department by American Better Chemicals (now Rho-Chem), circa 1964-1965.

35. Szabat, Sandra, FIT and Ernest Roehl, Rho-Chem, telephone conversation, 8-9-88.

36. Szabat, Sandra, FIT, and Chet Early, Rho-Chem, telephone conversation 8-9-88.

j/ss/rho/refs

37. Szabat, Sandra, FIT and Fred Stewart, Los Angeles County Sanitation Department, telephone conversation, 8-5-88.

38. Szabat, Sandra, FIT and Fred Stewart, Los Angeles County Sanitation Department, telephone conversation, 8-10-88.

39. Szabat, Sandra, M. Walters, and B. Thys, FIT Drive-by Inspection at Rho-Chem Corporation, 4-13-88.

40. Szabat, Sandra and Howard Ng, Northrup University, telephone conversation, 6-1-88.

41. U.S. Geological Survey, Venice, California Quadrangle, 7.5 Minute Series, 1964, Photorevised 1981.

42. U.S. Geological Survey, Inglewood, California Quadrangle, 7.5 Minute Series, 1964, photorevised 1981.

43. United States Department of Agriculture, Soil Conservation Service, Report and General Soil Map, Los Angeles County California, June 1967, revised 1969.

44. Climatic Atlas of the United States, U.S. Department of Commerce Environmental Science Services Administration, Environmental Data Service, June 1968.

45. Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C. 1983.

46. California Department of Water Resources, "Planned Utilization of the Groundwater Basins of the Coastal Plain of Los Angeles County," Appendix A, Groundwater Geology, Bulletin 104, June 1961.

47. Bookman-Edmonston Engineering, Inc. Evaluation of Saline Water Inland of the West Coast Basin Barrier, May 1986.

48. California Department of Water Resources. "Watermaster Service in the West Coast Basin, Los Angeles County, July 1, 1986 to June 30, 1987," September 1987.

49. Parker, Eugene M., City of Inglewood to Sandra Szabat, FIT letter, June 1988.

50. Szabat, Sandra, FIT and Al Marino, City of Inglewood Water Treatment Plant, telephone conversation, 7-6-88.

51. Szabat, Sandra, FIT and Al Riviera, City of Hawthorne, telephone conversation, 7-6-88.

52. Szabat, Sandra, FIT and Frank Costas, Southern California Water Company, 7-6-88.

j/ss/rho/refs

53. Szabat, Sandra, FIT, and Chris Nagler, California Department of Water Resources, contact log telephone conversation, 7-6-88.

54. Sandoval, Mark, Rho-Chem to Captain Greg Cole, Inglewood Fire Department, letter, 1-11-88.

55. Cole, Captain Greg, Inglewood Fire Department, Inspection Report, 2-1-88.

56. Cole, Captain Greg, Inglewood Fire Department to Ernest Roehl, Rho-Chem, letter, 2-26-88.

57. Fox, William, Inglewood Fire Prevention Bureau, Fire Investigation Report, 10-25-67.

58. Szabat, Sandra, FIT and Art Gobster, Los Angeles County Health Department, telephone conversation, 6-27-88.

59. Szabat, Sandra, FIT and John Lowry, Los Angeles County Department of Public Works, telephone conversation, 8-2-88.

60. Bristol, Andrew, FIT, and Charlie Twopack, SCAQMD, telephone conversation, 4-13-88.

61. Szabat, Sandra, FIT and Lynn Hedges, SCAQMD, telephone conversation, 6-1-88.

62. Industrial Wastewater Discharge Permit No. 9083 R-1, issued by Los Angeles County Sanitation District, 7-27-84.

63. Szabat, Sandra, FIT and Chet Early, Rho-Chem, telephone conversation, 8-25-88.

64. Facility Map submitted to Inglewood Fire Department by American Better Chemicals (now Rho-Chem), undated.

65. Szabat, Sandra, FIT and Tellis Hynes, Los Angeles County Sanitation District, telephone conversation, 8-9-88.

66. Sandoval, Mark, Rho-Chem to Greg Holmes, DOHS-Los Angeles Region, letter and lab data, 12-28-87.

PA/SI CONTACT LOG

Facility Name: Rho-Chem
Facility ID: CAD008364432

Name	Affiliation	Phone #	Date	Information
Elijah Hill	RWQCB-UST Dept.	213-620-5664	4-12-88	Company wants file info confidential.
Larry Peterson	RWQCB-Toxics Division	213-620-4460	4-12-88	No information.
Lucy McGovern	RWQCB-Permits	213-620-6086	4-12-88	No permits.
John Huff	LA County Dept. of Public Works	818-458-3513	4-12-88	Has files on USTs at Rho-Chem. File #I-9991
Leon Directo	LA County Sanitation District	213-699-7411	4-12-88	FIT must send a letter requesting information. Received information on 5-25-88.
Tom McConnel	City of Inglewood Engineering Dept.	213-412-5333	4-13-88	LA County Sanitation Dept. issues permits for sewer discharges.
Charlie Twopak	SCAQMD	818-572-6233	4-13-88	See contact report.
Brenda Rosario	DOHS	213-620-3279	4-14-88	Ms. Rosario pulled out Rho-Chem files for review, Also obtained proposed new Operation Plan for review.
Jose Alvarez	Inglewood Fire Prevention Department	213-412-5294	4-14-88	Contact Greg Cole in Fire Department for info on hazardous materials storage.
George Farag	LA County Flood Control	213-226-4382	4-14-88	FIT visited the office and copied a well log near Rho-Chem
Greg Cole	Inglewood Fire Dept.	213-412-5356	4-19-88	See contact report.

j/ss/rho/rfa/cl

PA/SI CONTACT LOG

Facility Name: Rho-Chem
Facility ID: CAD008364432

Name	Affiliation	Phone #	Date	Information
Greg Cole	Inglewood Fire Dept.	213-412-5356	5-4-88	Mr. Cole provided files for review. He enforces the Uniform Fire Code and Local Hazardous Materials Ordinance.
Oscar Enriquez	LA County Dept. of Public Works	818-458-3513	5-4-88	Provided files for review and copying.
Rollin Chippey	SCAQMD-Long Beach Office	213-537-1632	5-9-88	Current Rho-Chem files are in Long Beach. Historical records are in El Monte. Must send request letter.
Chuck Mason	SCAQMD-Long Beach Office	213-537-1632	5-10-88	He will assign an Air Quality Inspector to round up historical files and check out Rho-Chem.
Lynn Hedges	SCAQMD-Long Beach Office	213-537-1632	5-23-88	She inspected Rho-Chem on 5-20-88. According to company, solvent sales will move to Long Beach in December. Existing facility will expand waste treatment activities, but all USTs will be removed.
Jennifer Smith	Metropolitan Water District of Southern California	213-250-6058	5-23-88	See contact report.
John Joham	West Basin Municipal Water District	213-379-5455	5-23-88	See contact report.

j/ss/rho/rfa/cl

PA/SI CONTACT LOG

Facility Name: Rho-Chem
Facility ID: CAD008364432

Name	Affiliation	Phone #	Date	Information
Elijah Hill	RWQCB	213-620-5664	5-23-88	See contact report.
Jim Van Winkle	City of Inglewood	213-412-5333	5-24-88	City has 3 wells, 2 reservoirs. Water is 60% surface and 40% groundwater. Send letter for more info.
Ted Cunningham	Inglewood Water Treatment Plant	213-412-5472	5-24-88	See contact report.
Tom Salzano	Central and West Basin Replenishment District	213-927-2611	5-25-88	See contact report.
Howard Ng	Northrup University	213-337-4413	6-1-88	See contact report.
Lynn Hedges	SCAQMD-Long Beach Office	213-537-1632	6-3-88	Reviewed Historical permit file and current field file in El Monte Office.
Art Gobster	LA County Health Dept.	213-419-5350	6-27-88	See contact report.
Frank Costas	Southern California Water Company	213-251-3600	7-6-88	See contact report.
Al Rivier	City of Hawthorne	213-970-7226	7-6-88	See contact report.
Al Marine	Inglewood Water Treatment Plant	213-412-5472	7-6-88	See contact report.

j/ss/rho/rfa/cl

PA/SI CONTACT LOG

Facility Name: Rho-Chem
Facility ID: CAD008364432

Name	Affiliation	Phone #	Date	Information
Chris Nagler	Dept. of Water Resources	213-620-4204	7-6-88	Mr. Nagler identified the producing municipal wells on West Coast Basin Well location map.
Terry Bills	LA County Dept. of Regional Planning	213-974-6476	7-8-88	See contact report.
Ernest Roehl	Rho-Chem	213-776-6233	7-12-88	See contact report.
Ernest Roehl	Rho-Chem	213-776-6233	7-13-88	See contact report.
Bonnie O'Meara	Rho-Chem	213-776-6233	7-19-88	See contact report.
Chet Early	Rho-Chem	213-776-6233	7-26-88	See contact report.
Chet Early	Rho-Chem	213-776-6233	7-27-88	See contact report.
Randolph Harris	Kleinfelder	619-541-1145	7-31-88	Gave PID readings for soil borings. Info recorded in App. E.
John Lowry	LA County Dept. of Public Works	818-458-3129	8-02-88	See contact report.
Fred Stewart	LA County Sanitation Department	213-699-7411	8-05-88	See contact report.
Tellis Hynes	LA County Sanitation Department	213-699-7411	8-09-88	See contact report.
Ernest Roehl	Rho-Chem	213-776-6233	8-09-88	See contact report.
Chet Early	Rho-Chem	213-776-6233	8-09-88	See contact report.

j/ss/rho/rfa/cl

PA/SI CONTACT LOG

Facility Name: Rho-Chem
Facility ID: CAD008364432

Name	Affiliation	Phone #	Date	Information
Fred Stewart	LA County Sanitation Department	213-699-7411	8-10-88	See contact report.
Chet Early	Rho-Chem	213-776-6233	8-25-88	See contact report.

j/ss/rho/rfa/cl

CONTACT REPORT

AGENCY/AFFILIATION: SCAQMD		
DEPARTMENT:		
ADDRESS/CITY: 9150 Flair Drive, El Monte		
COUNTY/STATE/ZIP: CA 91731		
CONTACT(S)	**TITLE**	**PHONE**
1. Charlie Twopak		818-572-6233
2.		
E & E PERSON MAKING CONTACT: A. Bristol		**DATE:** 4/13/88
SUBJECT: Crosby & Overton and all other RFAs		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

Charlie stated that Crosby & Overton, Rho-Chem, Chem-Tech and Oil Process Co. have no violations. All the companies listed above are involved in separating oil from waste water. Currently Crosby & Overton, Oil Process and Chem-Tech have applications pending. Rho-Chem has approximately thirty permits. To view the files contact Norm Madison at (818) 572-6235.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Ingelwood Fire Department		
DEPARTMENT: HAZARDOUS MATERIALS SECTION		
ADDRESS/CITY: Box 6500, 1 Manchester Blvd., Inglewood		
COUNTY/STATE/ZIP: CA 90301		
CONTACT(S)	**TITLE**	**PHONE**
1. Greg Cole	Inspector	213-412-5356
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:**4-19-88
SUBJECT: Availability of file info on Rho-Chem		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

Inglewood Fire Department issues permits for storage of flammable materials above-ground and below-ground pursuant to the Uniform Fire Code. The Fire Department also conducts inspections. Permit application (past and current) are maintained on-file. Recent inspection reports are in Greg Cole's file, previous ones are in Fire Company files. He will check to see what they have. He also indicated that I need to send an information request letter.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Metropolitan Water District of Southern California		
DEPARTMENT: Water Quality Division		
ADDRESS/CITY: 1111 W. Sunset Blvd., Los Angeles		
COUNTY/STATE/ZIP: Los Angeles, CA 90012		
CONTACT(S)	**TITLE**	**PHONE**
1. Jennifer Smith	Legislative Analyst	213-250-6058
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 5-23-88
SUBJECT: Water supplies in site vicinity		
SITE NAME: Rho-Chem Corporation		**EPA ID#:**CAD008364432

The Metropolitan Water District (MWD) wholesales imported surface water to a number of agencies, which either sell directly to the consumer or to another water purveyor. The surface water is obtained from the Colorado River or the California Aqueduct. MWD supplies about 2/3 of the water for the Inglewood area. MWD sells the water to the West Coast Basin Municipal Water District, which sells it to the city of Inglewood.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: West Bain Municipal Water District		
DEPARTMENT:		
ADDRESS/CITY: 303 Garnet Street Redondo Beach		
COUNTY/STATE/ZIP: Los Angeles, CA 90277		
CONTACT(S)	**TITLE**	**PHONE**
1. John Joham	General Manager	213-379-5455
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 5-23-88
SUBJECT: Water supply to Inglewood/Groundwater flow direction		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

West Basin Municipal Water District sells surface water to the City of Inglewood, which the city blends with groundwater from its own municipal wells.

The groundwater flow gradient varies in this area. Historically, from pumping, the flow was from west to east. But he stated that Inglewood is in a faulted area and that the flow in the Silverado aquifer (from which drinking water is drawn) appears to be north-south. He also stated that the area south of Inglewood is served by the Southern California Water Company, which does operate wells in that area.

Groundwater for municipal water supplies is drawn from the Silverado aquifer.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: RWQCB - Los Angeles Region		
DEPARTMENT: Underground Storage Tanks Division		
ADDRESS/CITY: 107 South Broadway, Room 4027, Los Angeles		
COUNTY/STATE/ZIP: Los Angeles, CA 90012		
CONTACT(S)	**TITLE**	**PHONE**
1. Elijah Hill		213-620-5664
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:**5-23-88
SUBJECT: Current RWQCB involvement at Rho-Chem		
SITE NAME: Rho-Chem		**EPA ID#:**CAD008364432

RWQCB originally became involved with Rho-Chem at the beginning of the Underground Storage Tank (UST) program and required the investigation that lead to the 1985 Kleinfelder Report. RWQCB has not done any additional follow-up, but will require Rho-Chem to do more site characterization work when the tanks are removed.

I asked him about Rho-Chem's explanation for the boring #3 results (surface spillage) and the depth of contamination (at least 50 feet) and he stated that apparently solvent migration had occurred from the surface to at least 50 feet deep.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: City of Inglewood		
DEPARTMENT: Water Treatment Plant		
ADDRESS/CITY: 359 N. Eucalyptus, Inglewood		
COUNTY/STATE/ZIP: Los Angeles, CA		
CONTACT(S)	**TITLE**	**PHONE**
1. Ted Cunninngham	Supervisor	213-412-5472
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 5-24-88
SUBJECT: Locations of Wells and Reservoirs		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

Inglewood currently has three municipal wells on line: #1 is on 119th Place at Yukon, #2 and #3 are on 120th Street between Praire and Crenshaw and are about 300 yards apart.

These wells went on line in the 1970s. Other wells were abandoned due to siltation. The groundwater is treated and blended with surface water from MWD of Southern California (obtained through West Basin Municipal Water District). Blended water is stored at Morningside Reservoir (90th and Crenshaw) and North Inglewood Reservoir (Wexham Way and Hargrave) prior to distribution throughout the system.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Central and West Basin Water Replenishment District		
DEPARTMENT:		
ADDRESS/CITY: 7439 East Florence Avenue, Downey		
COUNTY/STATE/ZIP: Los Angeles, CA 90240		
CONTACT(S)	**TITLE**	**PHONE**
1. Tom Salzano	Assistant General Manager	213-927-2611
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 5-25-88
SUBJECT: Groundwater Use within 3 or 4 miles of Rho-Chem		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

City of Inglewood Well #'s: 3S 14W 10 G03 - within 3 miles
3S 14W 10 G04 - within 4 miles
3S 14W 10 H01 - within 4 miles

City of El Segundo - Only imported surface water from MWD.

City of Hawthorne well #'s 3S 14W 9 M01
within 3 miles of the site: 3S 14W 9 N04
3S 14W 9 N05
3S 14W 9 P01

Additionally, the Southern California Water Company operates 4 wells within 3 miles of the site. The well #'s are:
3S 14W 03 K01
3S 14W 03 K02
3S 14W 03 K03
3S 14W 04 N01

Several Los Angeles City wells are approximately 4 miles from the site. The well #'s are:
2S 14W 23 H2
2S 14W 23 H3
2S 14W 23 H6
2S 14W 23 H12
2S 14W 23 H14
2S 14W 23 H17

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Northrup University		
DEPARTMENT:		
ADDRESS/CITY: 5800 W. Arbor Vitae, Los Angeles		
COUNTY/STATE/ZIP: Los Angeles, CA		
CONTACT(S)	**TITLE**	**PHONE**
1. Howard Ng	Student	213-337-4413
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 6-1-88
SUBJECT: Campus Buildings/Housing		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

Northrup University has an enrollment of approximately 2200 students. Several campus buildings are located on Isis Avenue, including the engineering building, the alumni library, and McKinley Hall, a dormitory that can accommodate approximately 150 students (The dorm is approximately 0.3 miles south of Rho-Chem).

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Los Angeles County Health Department		
DEPARTMENT: Department of Water and Sewage		
ADDRESS/CITY: 123 West Manchester Blvd., Inglewood		
COUNTY/STATE/ZIP: Los Angeles, CA 90301		
CONTACT(S)	**TITLE**	**PHONE**
1. Art Gobster	Senior Sanitarian	213-419-5350
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 6-27-88
SUBJECT: Small Water Supplies/Uses of local surface water		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

Mr. Gobster stated that there are no small water supply systems in the area. Regarding uses of local surface water, he related the following: Centinela Creek is a cement-line storm drain that flows into Ballona Creek. There are no other beneficial uses of Centinela Creek. Ballona Creek flows into Santa Monica Bay. It is also a cement-lined storm drain as far west as Lincoln Boulevard. The remaining portion of the creek (about 1.5 stream miles to Santa Monica Bay) is unlined. The unlined portion of the creek is considered a tidal estuary. Beneficial uses around the mouth of Ballona Creek include fishing and sculling. Mr. Gobster also mentioned that the Ballona Wetlands are located directly south of Ballona Creek. They extend southward and eastward to slightly beyond Culver Boulevard and westward to Vista del Mar (about 1/2 mile from Santa Monica Bay).

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Southern California Water Company		
DEPARTMENT:		
ADDRESS/CITY: 3625 West 6th Street, Los Angeles		
COUNTY/STATE/ZIP: Los Angeles, CA 90020		
CONTACT(S)	**TITLE**	**PHONE**
1. Frank Costas	Manager	213-251-3600
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 7-6-88
SUBJECT: Groundwater information		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

The depths of the 4 Southern California Water Company Wells within 3 miles of Rho-Chem, along with company names are as follows:

Yukon #1 (3S 14W 03 K01) = 652 feet
Yukon #2 (3S 14W 03 K02) = 756 feet
Yukon #3 (3S 14W 03 K03) = 810 feet
Truro #1 (3S 14W 04 N01) = 695 feet

They serve approximately 40,000 people in the Lennox area (south of Inglewood) and the city of Hawthorne. Mr. Costas believes that the wells are perforated in the Silverado Aquifer.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: City of Hawthorne		
DEPARTMENT: Water Department		
ADDRESS/CITY: 4455 West 126th Street, Hawthorne		
COUNTY/STATE/ZIP: Los Angeles, CA 90250		
CONTACT(S)	**TITLE**	**PHONE**
1. Al Rivier	Utilities Superintendent	213-970-7226
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 7-6-88
SUBJECT: Hawthorne well information		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

The city of Hawthorne operates four municipal wells. Water from the wells is filtered and chlorinated at the city's treatment plant. A blend of 80% surface water (imported from Metropolitan Water District) and 20% groundwater is distributed throughout the system. Population served is 35,000. The wells are perforated in the Silverado Aquifer. The state well numbers, the City's well numbers, and the perforated intervals are as follows:

3S 14W 8 M1, #13, 306 to 402 feet.
3S 14W 8 N4, #4, 312 to 495 feet.
3S 14W 8 N5, #12, 300 to 530 feet.
3S 14W 8 P1, #8, 282 to 438 feet.

He will also send well logs.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: City of Inglewood		
DEPARTMENT: Water Treatment Plant		
ADDRESS/CITY: 359 N. Eucalyptus, Ingelwood		
COUNTY/STATE/ZIP: Los Angeles, CA		
CONTACT(S)	**TITLE**	**PHONE**
1. Al Marine	Plant Mechanic	2113-412-5472
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 7-6-88
SUBJECT: Perforations of Inglewood Wells		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

The State well numbers, city of Inglewood Well Numbers, and perforations are as follows:

3S 14W 10 G03, #1, 340 feet to 780 feet
3S 14W 10 G04, #2, 320 feet to 740 feet
3S 14W 10 H01, #3, 360 feet to 670 feet

The wells are perforated in the Silverado Aquifer.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Los Angeles County		
DEPARTMENT: Department of Regional Planning		
ADDRESS/CITY: 320 West Tempmle Street, Los Angeles		
COUNTY/STATE/ZIP: Los Angeles, CA 90012		
CONTACT(S)	**TITLE**	**PHONE**
1. Terry Bills	Regional Planner	213-974-6476
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 7-8-88
SUBJECT: Population within 4 miles of Rho-Chem		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364462

Approximately 350,000 people live within 4 miles of the site. The population distribution (as of July 1, 1987) is as follows:

Culver City	39,400
Hawthorne	61,000
El Segundo	15,000
Lennox	20,000
West Athens and Westmont	40,000
Ladera Heights	6,400
Windsor Hills and Baldwin Hills	12,600
Marina del Rey	3,600
Playa del Rey	2,800
Westchester	43,000
Inglewood	102,000

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Rho-Chem Corporation		
DEPARTMENT:		
ADDRESS/CITY: 425 Isis Avenue, Inglewood		
COUNTY/STATE/ZIP: Los Angeles, CA 90301		
CONTACT(S)	**TITLE**	**PHONE**
1. Ernest Roehl	President	213-776-6233
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 7-12-88
SUBJECT: Clarification of Items Outstanding from the VSI		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

1). Mr. Roehl related the following regarding the May 12, 1982 perchloroethylene (perc) spill: the spill was actually a mixture of perc and water. This incident occurred when steam injection still II was in use. According to Mr. Roehl, steam and perc came through the 6-foot column, passed through the condenser, and into the water separator for phase separation. Apparently a valve on the separator was turned the wrong way, so a mixture of mostly water and a small amount of perc overflowed. The liquid entered a drain, approximately 10-12 feet from the separator. The drain pipe lead to the gutter on Isis Avenue, so the mixture flowed out to the street.

2). Mr. Roehl indicated that the primary uses of the reboiler/fractionation column are to upgrade fluorinated solvents and to treat process wastewater (from the washing process) to remove the water soluble alcohols. Using hexane to break up azeotropic mixtures of flammable waste solvents (e.g. lacquer thinner) and water did not prove to be economically feasible.

3). Mr. Roehl indicated that the process flow diagram sent to DOHS in June 1986 was correct. That diagram showed tanks being used differently them they are now. Mr. Roehl verified that the tanks had been used as shown on that diagram.

4). Regarding waste handling practices prior to 1964, Mr. Roehl stated that there was probably no waste initially when the company was dealing primarily with oils and lubricants. Company records indicate that off-site recyclers (American Potash Company and Deidre Corporation) were used in 1961 to distill waste solvents originally sold as virgin chemicals by Rho-Chem. Mr. Roehl stated that these wastes were probably brought back to Rho-Chem prior to shipping for off-site treatment. Further details regarding this operation are not available.

5). Spent filters used to purify TF are sent to Marine Shale for incineration.

j/ss/rho/rfa/cr

6). Mr. Roehl clarified the role of F&C Waste Chemical: this company was created by Richard O'Meara in 1964 or 1965, essentially as a "paper corporation" for employees to share in profit from the solvent recycling business. Though the company was never profitable, Mr. O'Meara kept it going until 1972.

7). On-site waste solidification with the ribbon mixer operated form 1982 or 1983 to 1986.

8). Mr. Roehl clarified the startup date of the first version of the Abcolene Still Solvent Recovery System as follows: the still was purchased in August 1963 and went on-line in July 1964.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Rho-Chem Corporation		
DEPARTMENT:		
ADDRESS/CITY: 425 Isis Avenue, Inglewood		
COUNTY/STATE/ZIP: Los Angeles, CA 90301		
CONTACT(S)	**TITLE**	**PHONE**
1. Ernest Roehl	President	213-776-6233
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 7-13-88
SUBJECT: Early Business History/Present Business Breakdown		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

The company was founded in 1951 by Richard O'Meara as a "sole proprietorship." Sale of oils and lubricants was the main thrust of the business initially, but by 1957 solvents and become the primary sales item. Oils, lubricants, and solvents were received from the manufacturer in 55-gallon drums, stored on-site, and shipped to customers in the original containers. Repackaging into 1 and 5-gallon cans started some time after the UST's had been installed, probably around 1963 when the fill dock went in. In 1974, Rho-Chem installed the bottling line for preparation of ultra-pure solvents (sold in 1 gallon glass bottles). The company first sent waste to Marine Shale in January 1987.

Rho-Chem has been buying back used solvents from its virgin solvent customers since 1972. Sales figures for Rho-Chem's recycled solvents are included with those of the virgin solvents, so Mr. Roehl could not evaluate what percentage of the company's revenues comes from recycling. Flammable wastes that are shipped off-site to Systec or Marine Shale (what Rho-Chem calls "billable wastes") accounted for approximately 22% of Rho-Chem's 1987 sales.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Rho-Chem Corporation		
DEPARTMENT:		
ADDRESS/CITY: 425 Isis Avenue/Inglewood		
COUNTY/STATE/ZIP: Los Angeles, CA 90301		
CONTACT(S)	**TITLE**	**PHONE**
1. Bonnie O'Meara	Rho-Chem Principle Owner	213-776-6233
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 7-19-88
SUBJECT: Clarification of business ownership and property ownership		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

Mrs. O'Meara related the following:

The company was founded as American Better Chemicals (American) in April 1951 by Richard O'Meara. The original company operated out of an office only as a brokerage - oils and lubricants were shipped by common carrier.

In early 1952, the business rented a warehouse on Hindry Street (in Inglewood), so products could be stored on-hand for quicker delivery.

On June 13, 1953, a 90-foot by 231-foot parcel of land was purchased, houses removed, and a steel building constructed (this building remains on-site). The second parcel, 75 feet by 231 feet, was purchased in mid-1961. At that time, both parcels were jointly owned by Bonnie and Richard O'Meara. On October 11, 1965, the northernmost parcel, 41 feet by 231 feet, was leased from Edward Bennet.

On March 3, 1970, ABCO Industries was established with Bonnie O'Meara as sole owner. ABCO owned the solvent recovery systems on-site. On February 1, 1974, Bonnie O'Meara purchased the property and Richard O'Meara's stock in American. In July 1974, ABCO Industries merged with American and in August 1974 the name of the company became Rho-Chem Corporation.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Rho-Chem Corporation		
DEPARTMENT:		
ADDRESS/CITY: 425 Isis Avenue/Inglewood		
COUNTY/STATE/ZIP: Los Angeles, CA 90301		
CONTACT(S)	**TITLE**	**PHONE**
1. Chet Early	Plant Manager	213-776-6233
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 7-26-88
SUBJECT: Current Contents of AGT's/Truck Washout Details		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

AGT 50 - Virgin 1,1,1-TCA
AGT 51 - Reconstituted 1,1,1-TCA *
AGT 52 - Recycled 1,1,1-TCA
AGT 53 - Reconstituted Perchloroethylene
AGT 54 - Reconstituted Mixed Chlorinated
AGT 55 - Virgin methylene chloride
AGT 56 - Recycled methylene chloride and 1,1,1-TCA
AGT 57 - Reconstituted methylene chloride
AGT 58 - Virgin perchloroethylene
AGT 60 - Recycled water
AGT 61 - Wash process wastewater (alcohols and water)
AGT 62 - Blending Tank
AGT 63 - Blending Tank
AGT 64 - Holding Tank for recycled water
AGT 65 - TF alcohol "cut" from column
AGT 66 - Waste methylene chloride and 1,1,1-TCA
AGT 67 A,B, or C - Alcohol cut from treating wash process wastewater
AGT 67D - Vent system

* Reconstituted mixtures are blends of virgin and recycled solvent.

Mr. Early also clarified the truck washout procedures as follows: After each bulk load of waste solvents is off-loaded, the 3500 gallon vacuum truck is water-rinsed. The front end of the truck is parked in the north driveway and lifted up on blocks so that the rear end of the truck is tilted downward into the bermed drum pumping area. The rinsewater is pumped into AGT 42 for storage pending shipment to Romic for treatment.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Rho-Chem Corporation		
DEPARTMENT:		
ADDRESS/CITY: 425 Isis Avenue/Inglewood		
COUNTY/STATE/ZIP: Los Angeles, CA 90301		
CONTACT(S)	**TITLE**	**PHONE**
1. Chet Early	Plant Manager	213-776-6233
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 7-27-88
SUBJECT: Clarification of Current Waste Process Flows and Quantities Treated		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

Trichlorotrifluoroethane (TF) is normally used in second-stage cleaning of metal parts (first stage is usually with 1,1,1-TCA). Waste TF is essentially a mixture of TF, about 9-10% alcohols (or other water soluble solvents), and 1,1,1-TCA. By experience they have found that very little greasy sludge was being produced when the waste TF was initially fed into the thin film evaporator, so about 4 months ago they began feeding waste TF directly into the reboiler from AGT 41 (as long as waste TF is not too greasy).

Mr. Early described the process flow as follows:
Waste TF is fed directly into the reboiler and heated. TF and alcohols (or other waste soluble solvents) vaporize and go through the column. The 1,1,1-TCA remains in the reboiler and is drained to AGT 35 or AGT 33. The overhead product (TF plus alcohols) goes through the condenser and AGT 69 to AGT 65. The distillate is held here pending lab analysis to rule out boil-over of the 1,1,1-TCA and to determine the percentage of water soluble solvent (usually 9-10% alcohols). From AGT 65, approximately 3000 gallons is fed into AGT 78 for water washing to extract the alcohols. About 1000 gallons of water from AGT 60 is pumped up through the bottom of AGT 78 to solubilize the alcohols. The alcohol-water mix rises to the top of AGT 78, is drawn off the top and recirculated up through the bottom of the tank until the water is saturated with dissolved alcohols. This saturated wastewater is drawn off and piped to AGT 79. Additional washing cycles with more water from AGT 60 are performed as necessary. The wastewater in AGT 79 is eventually transferred to AGT 61 for storage pending treatment in the reboiler. The TF remaining in AGT 78 is drawn off the bottom of the tank, passed through a water separator, and is pumped through a dryer to AGT 77. A sensing probe near the bottom of the water separator turns off the pump when it senses water. TF remaining in the bottom of the separator below the probe is drained into a drum and pumped back into AGT 41. The overlying water layer is drained into a drum and pumped into AGT 61. The TF held in AGT 77 is checked for purity and dryness and then pumped to AGT

76 for storage pending sale.

Wastewater generated from this washing process is stored in AGT 61 and is also treated in the reboiler. Mr. Early described the process flow as follows: wastewater from AGT 61 is fed directly into the reboiler and heated. The alcohols or other water soluble solvents boil over first, concentrate in the column, and are collected in AGT 67 compartments A, B, or C and analyzed for BTU content. Usually at 7000-8000 BTUs per pound, the mixture is pumped to AGT 38 for storage pending blending in AGT 34. The water remaining in the reboiler is boiled over to AGT 64 and analyzed by GC to make sure the alcohols have been removed. The recycled water is subsequently pumped to AGT 60 for storage pending re-use in the water wash tank (AGT 78).

Mr. Early stated that batches of chlorinated waste solvents are treated in the thin film evaporator. The overhead product is condensed, collected in AGT 30, and pumped to AGT 78. A sample is collected for GC analysis to determine the concentration of water soluble solvents. If greater than 1%, the water wash procedure is performed. If less than 1%, the chlorinated solvent is subjected only to drying. The recycled solvent is then routed to the appropriate AGT (see contact report from 7-26-88) for storage pending sale or blending into various cold cleaning formulations or reconstituted mixtures.

Mr. Early also provided the waste quantities treated during the first half of 1988: for waste TF, approximately 5000-7000 gallons month; for waste chlorinated solvents, an average of 43,000 gallons per month.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: LA County Department of Public Works		
DEPARTMENT: Flood Control		
ADDRESS/CITY: 900 S. Fremont Ave., Alhambra		
COUNTY/STATE/ZIP: Los Angeles, CA 91803		
CONTACT(S)	**TITLE**	**PHONE**
1. John Lowry	Engineer	818-458-3129
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 8-2-88
SUBJECT: Storm Drainage in Rho-Chem vicinity		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

Curbside catch basins on Isis Avenue collect run-off and lead to storm drain pipes below ground. The pipes convey run-off to Domiguez Channel, one of four flood control channels maintained by the LA County Dept. of Public Works (The other 3 are Ballona Creek, the Los Angeles River, and the San Gabriel River). Dominguez Channel is located approximately three miles southeast of the site and ultimately drains to San Pedro Bay.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Los Angeles County Sanitation District		
DEPARTMENT:		
ADDRESS/CITY: 1955 Workman Mill Road/Whittier		
COUNTY/STATE/ZIP: Los Angeles, California 90607		
CONTACT(S)	**TITLE**	**PHONE**
1. Fred Stewart	Industrial Waste Inspector	213-699-7411
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:**8-5-88
SUBJECT: Clarification of Drlum Steam-Cleaning Operation		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

Fred Stewart provided the following description of the drum steam-cleaning operation:

A steam wand and hose connected to the boiler provided hot water to flush residual solvents out of 55-gallon drums. The drums were inverted over a floor drain in the warehouse to empty out the rinsate. The drain led to a sump located at the western edge of the warehouse. The contents of the sump flowed into the sanitary sewer.

Mr. Stewart stated that Rho-Chem personnel had informed him that this operation was a service for their smaller customers only and that dirty drums from large customers were sent to Superior Drum for reconditioning.

Mr. Stewart stated that he informed Rho-Chem personnel that their operation had to be regulated under an industrial wastewater discharge permit during his 1981 inspection. Mr. Stewart stated that during his April 1982 inspection, the drum cleaning operation was no longer in use and the floor drain in the warehouse had been sealed.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Los Angeles County Sanitation District		
DEPARTMENT:		
ADDRESS/CITY: 1955 Workman Mill Road, Whittier		
COUNTY/STATE/ZIP: Los Angeles, California 90607		
CONTACT(S)	**TITLE**	**PHONE**
1. Tellis Hynes	Industrial Waste Inspector	213-699-7411
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 8-9-88
SUBJECT: Clarification of file information		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

I asked Mr. Hynes to clarify whether or not Rho-Chem's application to discharge process wastewater from the thin film evaporator and steam injection still to the sanitary sewer had been approved. I also asked him if the "interceptor" shown on the plans submitted with the application had ever been installed.

Mr. Hynes stated that Rho-Chem's application to discharge process wastewater had been denied because of the high solvent content, so the interceptor was never installed. He stated that Rho-Chem is only allowed to discharge blowdown from the boiler and cooling towers on-site.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Rho-Chem Corporation		
DEPARTMENT:		
ADDRESS/CITY: 425 Isis Avenue, Inglewood		
COUNTY/STATE/ZIP: Los Angeles, California 90301		
CONTACT(S)	**TITLE**	**PHONE**
1. Ernest Roehl	President	213-776-6233
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:**8-09-88
SUBJECT: Clarification of Sump in Warehouse		
SITE NAME: Rho-Chem	**EPA ID#:** CAD008364432	

Mr. Roehl reiterated his claim that no drum steam-cleaning operation ever existed at Rho-Chem.

He stated that the sump in the middle warehouse had not been connected to the floor drain, but had received washwater from washing the exteriors of Rho-Chem trucks and rainwater runoff from the yard. He indicated that the contents of the sump were pumped out to the south driveway which slopes towards Isis Avenue. He also stated that the sump was filled in with concrete several years ago.

The sump was approximately 2 feet by 2 feet by 2 feet. Mr. Roehl also stated that the floor drain in the warehouse lead directly to the sanitary sewer instead of to the sump as Mr. Stewart had stated.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Rho-Chem Corporation		
DEPARTMENT:		
ADDRESS/CITY: 425 Isis Avenue, Inglewood		
COUNTY/STATE/ZIP: Los Angeles, California 90301		
CONTACT(S)	**TITLE**	**PHONE**
1. Chet Early	Plant Manager	213-776-6233
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:**8-9-88
SUBJECT: Sump in Warehouse/AGT 64 Clarification		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

Mr. Early described the sump as follows: it was approximately 2 feet square and 2 feet deep, cement-lined, and located just inside the western edge of the middle warehouse. The sump collected yard runoff because at one time the rear yard was higher in elevation on than the warehouse buildings. Mr. Early believes that the sump was filled in some time in 1983.

Regarding AGT 64, Mr. Early stated that it only received high boiling aromatics for a very short time, but he could not remember the exact dates. Currently AGT 64 is the holding tank for treated wash wastewater, which is held in this tank pending a GC analysis. Mr. Early stated that the analysis may show small amounts of alcohols or ketones and that results from an outside lab also showed 3-5 ppm of methylene chloride.

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Los Angeles County Sanitation District		
DEPARTMENT:		
ADDRESS/CITY: 1955 Workman Mill Road, Whittier		
COUNTY/STATE/ZIP: Los Angeles, California 90607		
CONTACT(S)	**TITLE**	**PHONE**
1. Fred Stewart	Industrial Waste Inspector	213-699-7411
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 8-10-88
SUBJECT: Floor Drain in Warehouse/Drum Steam-Cleaning Unit		
SITE NAME: Rho-Chem		**EPA ID#:** CAD008364432

I informed Mr. Stewart of my conversation with Ernest Roehl regarding the existence of the Drum steam cleaning unit and the outlet of the floor drain.

M. Stewart reiterated the existence of the drum steam cleaning operation. He also stated that he had been informed by the plant manager that the floor drain in the warehouse lead to the sump (rather than directly to the sanitary sewer as stated by Mr. Roehl).

j/ss/rho/rfa/cr

CONTACT REPORT

AGENCY/AFFILIATION: Rho-Chem Corporation		
DEPARTMENT:		
ADDRESS/CITY: 425 Isis Avenue, Inglewood		
COUNTY/STATE/ZIP: Los Angeles, California 90301		
CONTACT(S)	**TITLE**	**PHONE**
1. Chet Early	Plant Manager	213-776-6233
2.		
E & E PERSON MAKING CONTACT: Sandra Szabat		**DATE:** 8-25-88
SUBJECT: Empty Used Drum Storage Area/# of Incoming Drums		
SITE NAME: Rho-Chem	**EPA ID#:** CAD008364432	

Mr. Early provided the following description of the empty used drum storage area: the area can store 500 to 600 empty used drums. Those that are suitable for reconditioning are picked up by Cooper or Pacific Coast Drum (registered used drum reconditioners) once or twice per week. About 200-250 drums are taken off-site with each pick-up. Empty drums that are damaged (and therefore unsuitable for reconditioning) are also accumulated in this area. At 6-week to 2-month intervals, PFR Company brings a portable drum crusher to crush the damaged drums. The crushed drums are then stored on the floor in the consolidated solids storage area in the south warehouse. After about 300 crushed drums accumulate, Nash Salvage Company transports them to Casmalia in a roll-off bin.

Mr. Roehl provided the following data for the number of incoming drums of waste solvents in 1988:

January	1186
February	1507
March	1531
April	1395
May	1633
June	1767
July	1297
	10,316 - or approximately 1474 drums average per month.

j/ss/rho/rfa/cr

0762
Rho Chem

RCRA Facility Assessment 9/6/88

APPENDIX A
Storage Tank Contents

APPENDIX A STORAGE TANK CONTENTS

Tank Number(A)	Capacity (Gal)	Instal-lation Date	Removal Date	Historical Contents(B)	Current Contents
UST 1	1,000	1962	N/A	n-Butyl Alcohol Isobutyl Acetate Methyl Isoamyl Ketone	EMPTY
UST 2	1,000	1962	N/A	Methyl Isobutyl Ketone n-Butyl Alcohol	Naphtha
UST 3	1,000	1962	N/A	Butyl Acetate Isobutyl Alcohol	EMPTY
UST 4	1,000	1962	N/A	805 Lacquer Thinner Diacetone Alcohol	Naphtha
UST 5	1,000	1962	N/A	Butyl Cellosolve	EMPTY
UST 6	5,000	1962	N/A	Solution #14 805 Lacquer Thinner 147-66 Lacquer Thinner 91% Isopropyl Alcohol Toluene	Methyl Ethyl Ketone (MEK)
UST 7	5,000	1962	N/A	Toluene Kerosene	Toluene
UST 8	5,000	1962	N/A	147 Lacquer Thinner 703 Lacquer Thinner	Blend of MEK, Methanol, Toluene, Naphtha
UST 9	5,000	Between 1956-1958	N/A	360 Naphtha Odorless Thinner Solvent Blend	Naphtha (Mineral Spirits)
UST 10	5,000	Between 1956-1958	N/A	MEK	MEK
UST 11	5,000	Between 1956-1958	N/A	Ethanol, Lacquer Thinner Xylenes, Mineral Oil	Xylenes
UST 12	5,000	Between 1956-1958	N/A	Naphtha Toluene	Naphtha
UST 13 (unit 3.11)	5,000	Between 1956-1958	N/A	Methyl Alcohol Waste 1,1,1-TCA	EMPTY
UST 14 (unit 3.11)	5,000	Between 1956-1958	N/A	Isopropyl Alcohol Waste 1,1,1-TCA	EMPTY

APPENDIX A STORAGE TANK CONTENTS

Tank Number(A)	Capacity (Gal)	Instal-lation Date	Removal Date	Historical Contents(B)	Current Contents
UST 15	5,000	Between 1956-1958	N/A	Acetone	Acetone
UST 16	5,000	Between 1956-1958	N/A	Xylene	Methanol
UST 17	5,000	1956	N/A	MEK	Isopropyl Alcohol
UST 18 (unit 3.1)	2,000	1956	N/A	Sludge Oil Kerosene Gasoline	EMPTY
UST 19 (unit 3.12)	4,000	1957	N/A	BB Black Cutting Oil Methyl Isobutyl Ketone Waste Perchloroethylene n-Butyl Acetate	EMPTY
UST 20	4,000	1957	N/A	Mineral Oil Cutting Oil	EMPTY
UST 21	4,000	1957	N/A	Methanol Isobutyl Acetate	EMPTY
UST 22	4,000	1957	N/A	Light Mineral Oil Acetone	EMPTY
UST 23	5,000	1962	N/A	Recycled 1,1,1-TCA	EMPTY
UST 24	5,000	1962	N/A	Recycled TCE n-Butyl Acetate	Acetone
UST 25	5,000	1962	N/A	Virgin 1,1,1-TCA Dock Flush Rho-Clene 55	EMPTY
UST 26	5,000	1962	N/A	Virgin Perc. 2-Ethoxyethyl Acetate Naphtha	Isopropyl Alcohol
UST 27 (unit 3.19)	5,000	1962	1983	Still Bottoms	N/A
UST 28	5,000	1962	1983	Virgin 1,1,1-TCA Virgin Perc. Cellosolve Acetate	N/A
UST 29	5,000	1962	1983	Virgin 1,1,1-TCA Virgin Perc.	N/A

APPENDIX A STORAGE TANK CONTENTS

Tank Number(A)	Capacity (Gal)	Instal-lation Date	Removal Date	Historical Contents(B)	Current Contents
UST 30	5,000	1962	1983	Solvent Blend Dock Flush Virgin 1,1,1-TCA Ethyl Acetate	N/A
UST 31	5,000	1962	1983	Solvent Mix Dock Flush Virgin 1,1,1-TCA Diesel	N/A
UST 32	5,000	1962	1983	Gasoline	N/A
USTs 33-38 (Unit 3.16)	5,000 each	1967	1982	Chlorinated and Fluorinated Waste Solvents	N/A
UST 39 (unit 3.17)	10,000	1967	1982	Waste Flammable Solvents	N/A
USTs 40-44 (unit 3.17)	5,000 each	1967	1982	Waste Flammable	N/A Solvents
UST 27	5,000	1983	N/A	Diesel	Same
UST 28	5,000	1983	N/A	Gasoline	Same
AGTs 39-40(C) (unit 3.3)	2,000 each	1964	1982	Waste Chlorinated Solvents	N/A
AGTs 41-47 (unit 3.3)	500 each	1964	1967	Waste Chlorinated Solvents	N/A
AGT 33 (unit 3.20)	8,000	1982	N/A	Recycled Flammables	Waste 1,1,1-TCA
AGT 34 (unit 3.20)	8,000	1982	N/A	Recycled Flammables Wash Wastewater	Flammable Waste Solvent Blends
AGT 35 (unit 3.20)	8,000	1982	N/A	Recycled Flammables Waste Fluorinated Solvents	Mixed Chlorinated Waste Solvents
AGT 36 (unit 3.20)	8,000	1982	N/A	Flammable Waste Solvents	Waste Perc.
AGT 37 (unit 3.20)	8,000	1982	N/A	Waste Perc.	Waste 1,1,1-TCA

APPENDIX A STORAGE TANK CONTENTS

Tank Number(A)	Capacity (Gal)	Installation Date	Removal Date	Historical Contents(B)	Current Contents
AGT 38 (unit 3.20)	8,000	1982	N/A	Waste 1,1,1-TCA	Flammable waste Solvents
AGT 39 (unit 3.20)	8,000	1982	N/A	Mixed Chlorinated Waste Solvents	Waste Methylene Chloride
AGT 40 (unit 3.20)	8,000	1982	N/A	Flammable Waste Solvents	Flammable Waste Solvents
AGT 41 (unit 3.20)	8,000	1982	N/A	Flammable Waste Solvents, Recycled Wastewater	Fluorinated Waste Solvents (TF)
AGT 42 (unit 3.20)	8,000	1982	N/A	Waste Methylene Chloride	Wastewater with Low Concentration of Solvents
AGT 29 (unit 3.22)	6,000	1982 or 1983	N/A	Still Bottoms	Same
AGT 30 (unit 3.22)	4,000	1982 or 1983	N/A	Flammable Condensate	Halogenated Solvent Condensate
AGT 31 (unit 3.22)	4,000	1982 or 1983	N/A	Flammable Waste Feed Tank	Halogenated Waste Feed Tank
AGT 50	12,000	1967	N/A	Virgin TCE	Virgin 1,1,1-TCA
AGT 51 (unit 3.13)	12,000	1967	N/A	Fluorinated Waste Virgin Perc.	Reconstituted 1,1,1-TCA
AGT 52	12,000	1967	N/A	Recycled 1,1,1-TCA	Same
AGT 53	12,000	1967	N/A	Virgin 1,1,1-TCA	Reconstituted Perc.
AGT 54	12,000	1967	N/A	Virgin Methylene Chloride	Chlorinated Blend
AGT 55	8,000	1982	N/A	Recycled Methylene Chloride, Recycled TF	Virgin Methylene Chloride
AGT 56	8,000	1982	N/A	Perchoroethylene Recycled Methylene Chloride	Recycled Meth. Chloride and 1,1,1-TCA
AGT 57	8,000	1982	N/A	Recycled Chlorinated Solvent Blend	Reconstituted Methylene Chloride

APPENDIX A STORAGE TANK CONTENTS

Tank Number(A)	Capacity (Gal)	Instal-lation Date	Removal Date	Historical Contents(B)	Current Contents
AGT 58	8,000	1982	N/A	Recycled Perc.	Virgin Perc.
AGT 60	4,200	1985	N/A	Recycled Alcohols	Recycled Water
AGT 61 (unit 3.33)	4,200	1985	N/A	Recycled Ketones	Wash Wastewater
AGT 62	4,200	1985	N/A	Recycled Chlorinated	"Dock Flush" (D)
AGT 63	4,200	1985	N/A	Recycled TF	"Dock Flush" (D)
AGT 64 (unit 3.34)	4,000	1985	N/A	Recycled High Boiling Aromatics	Recycled Water
AGT 65 (unit 3.24)	4,000	1985	N/A	Recycled Thinners (low water solubility)	TF/Alcohol Condensate
AGT 66 (unit 3.25)	6,000	1983	N/A	Still Bottoms	Mix of Waste 1,1,1-TCA and Meth. Chloride
AGT 67 (unit 3.24)	3,400	1985	N/A	Hexane	Alcohol Condensates
AGT 70 (unit 3.24)	600	1985	N/A	Wastewater	Not In Use
AGT 75	5,700	1985	N/A	Recycled Fluorinated(TF)	Same
AGT 76	5,700	1985	N/A	Virgin Fluorinated(TF)	Same
AGT 80	1,000	1987	N/A	Virgin TCE	Same

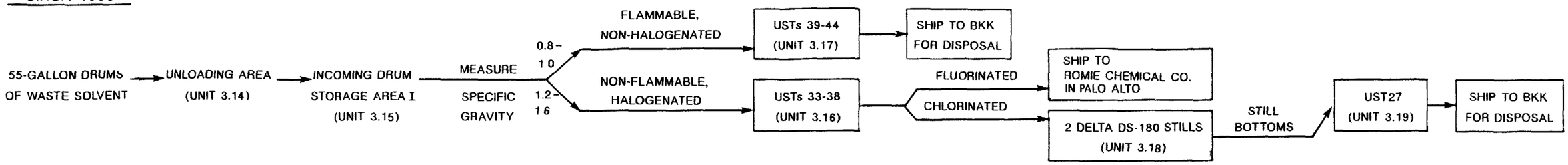
NOTES:
(A) UST = Underground Storage Tank, AGT = Above-Ground Storage Tank. Tanks that are or were SWMUs have the unit numbers listed below the tank numbers. Some of the tanks had different numerical designations historically (see text).
(B) Some of the compounds listed, e.g. "805 Lacquer Thinner," refer to Rho-Chem proprietary blends. Their exact chemical composition is unknown.
(C) These AGTs were moved in 1967 and renumbered as 45 and 46 by Rho-Chem.
(D) "Dock Flush" is a blend of recycled and/or virgin solvents generated from flushing the hoses used to transfer solvents from bulk storage to 55-gallon drums.

SOURCES: References 1, 3, 5, 8, 9, 22, and 34.

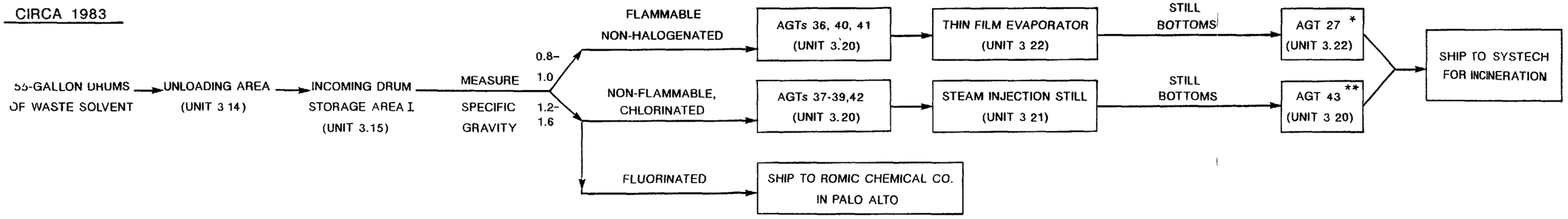
APPENDIX B
Historical Waste Process Flow Diagrams

SOURCE. References 1 and 4

CIRCA 1980



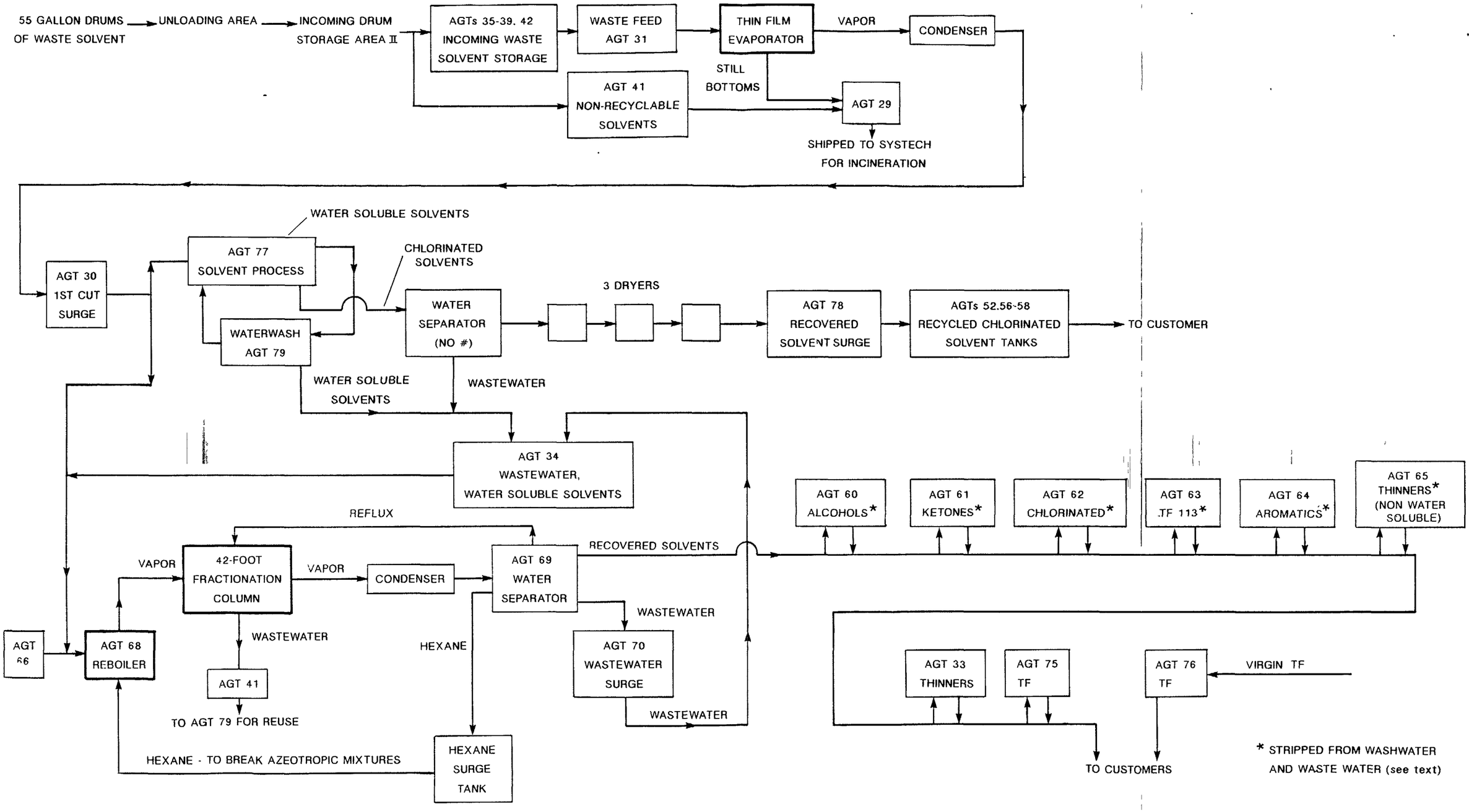
CIRCA 1983



* AGT 27 IS CURRENTLY AG+29
AGT 43 IS CURRENTLY AGT 66

Figure B-1
KNOWN HISTORICAL WASTE HANDLING PRACTICES AT RHO-CHEM CORPORATION

SOURCE: References 18 and 21



NOTE.
SOLVENT-RECOVERY SYSTEMS OPERATE IN SERIES

Figure B-2
1986 WASTE PROCESS FLOW DIAGRAM AT RHO-CHEM CORPORATION

APPENDIX C
Analytical Data From Soil Borings

TABLE 2

RESULTS OF LABORATORY ANALYSES OF SOIL SAMPLES

RHO-CHEM CORPORATION

INGLEWOOD, CA.

	Boring 1		Boring 2		Boring 3			
PARAMETER	15 Ft.	30 Ft.	15 Ft.	30 Ft.	5 Ft.	15 Ft.	30 Ft.	50 Ft.
Purgeable Priority Pollutants Extraction								
1,1,1-Trichloroethane, mg/kg	<0.3	<0.3	<0.3	<0.3	8600	570	11	1.8
1,1-Dichloroethylene, mg/kg	<0.3	0.6	<0.3	<0.3	<70	<10	---	---
Acrolein, mg/kg	<3	<3	<3	<3	<700	<100	<10	<10
Acrylonitrile, mg/kg	<3	<3	<3	<3	<700	<100	<10	<10
Chlorobenzene, mg/kg	<0.3	<0.3	<0.3	<0.3	<70	10	---	---
Ethylbenzene, mg/kg	<0.3	<0.3	<0.3	<0.3	330	110	---	---
Methylene Chloride, mg/kg	<0.3	11	0.5	<0.3	170	15	40	40
Tetrachloroethylene, mg/kg	<0.3	0.9	<0.3	0.4	45,000	10,000	47	28
Trichloroethylene, mg/kg	<0.3	1.2	<0.3	0.4	2200	1100	13	49
Toluene, mg/kg	<0.3	<0.3	<0.3	<0.3	10,000	790	9	4.5
trans-1,2-Dichloroethylene, mg/kg	<0.3	0.6	<0.3	0.4	<70	14	<1	1.8
Other Purgeable Priority Pollutants,	<0.3	<0.3	<0.3	<0.3	<70	<10	<1	<1
Semi-Quantified Results **								
C10 Alcohol, mg/kg	---	---	---	---	---	40	---	---
Acetone, mg/kg	---	---	---	---	---	15	---	---
Freon 113, mg/kg	---	---	---	---	120	---	---	---
Methyl Cyclohexane, mg/kg	---	---	---	---	390	40	---	---
Xylene Isomers, mg/kg	---	---	---	---	920	270	1.8	---
Hydrocarbons by IR, mg/kg	<10	<10	22	<10	4100	750	<10	12

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES

RHO-CHEM CORPORATION

INGLEWOOD, CA.

PARAMETER	Boring 4		Boring 5			
	15 Ft.	30 Ft.	5 Ft.	15 Ft.	30 Ft.	50 Ft.
Purgeable Priority Pollutants Extraction						
1,1,1-Trichloroethane, mg/kg	<1	9	1.8	3.6	7.2	<1
Acrolein, mg/kg	<10	<10	<10	<10	<10	<10
Acrylonitrile, mg/kg	<1	<10	<10	<10	<10	<10
Methylene Chloride, mg/kg	<10	10	1.8	1.8	5.4	<1
Tetrachloroethylene, mg/kg	<1	1.4	4.5	66	2.7	<1
Trichloroethylene, mg/kg	<1	1.8	<1	1.8	<1	3.6
Toluene, mg/kg	<1	<1	<1	<1	<1	<1
trans-1,2-Dichloroethylene, mg/kg	<1	<1	<1	<1	---	---
Other Purgeable Priority Pollutants,	<1	<1	<1	<1	<1	<1
Semi-Quantified Results **						
Freon 113, mg/kg	5.4	2.7	2.7	2.7	2.7	2.7
Xylene Isomers, mg/kg	---	---	---	---		
Hydrocarbons by IR, mg/kg	<10	<10	<10	<10	<10	<10

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

TABLE 2 (Continued)

RESULTS OF LABORATORY ANALYSIS OF SOIL SAMPLES

RHO-CHEM CORPORATION

INGLEWOOD, CA.

PARAMETER	Boring 6 5 Ft.	15 Ft.	30 Ft.	50 Ft.
Purgeable Priority Pollutants Extraction				
1,1,1-Trichloroethane, mg/kg	130	<1	<1	<1
Acrolein, mg/kg	<10	<10	<10	<10
Acrylonitrile, mg/kg	<10	<10	<10	<10
Methylene Chloride, mg/kg	<1	<1	4.5	1.4
Tetrachloroethylene, mg/kg	3600	4.5	<1	8.3
Trichloroethylene, mg/kg	36	<1	<1	28
Toluene, mg/kg	<1	<1	<1	3.8
Other Purgeable Priority Pollutants,	<1	<1	<1	<1
Semi-Quantified Results **				
Freon 113, mg/kg	5.4	3.0	---	---
Hydrocarbons by IR, mg/kg	78	<10	24	<10

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

APPENDIX D
Photographs from FIT Drive-by and Visual Site Inspection

FIELD PHOTOGRAPHY LOG SHEET

DATE: 4-13-88

TIME: 10 (AM) PM

DIRECTION:
facing northwest

WEATHER: clear, sunny, warm

PHOTOGRAPHED BY:
Sandra Szabrat

DESCRIPTION:
Entrance to Rho-Chem offices, 425 Isis Avenue

DATE: 4-13-88

TIME 10 (AM) PM

DIRECTION:
facing northwest

WEATHER: clear, sunny, warm

PHOTOGRAPHED BY:
Sandra Szabrat

DESCRIPTION:
Businesses to south of Rho-Chem. Note Overhill Farms directly to the south of Rho-Chem.

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 4-13-88

TIME: 10^05 (AM) PM

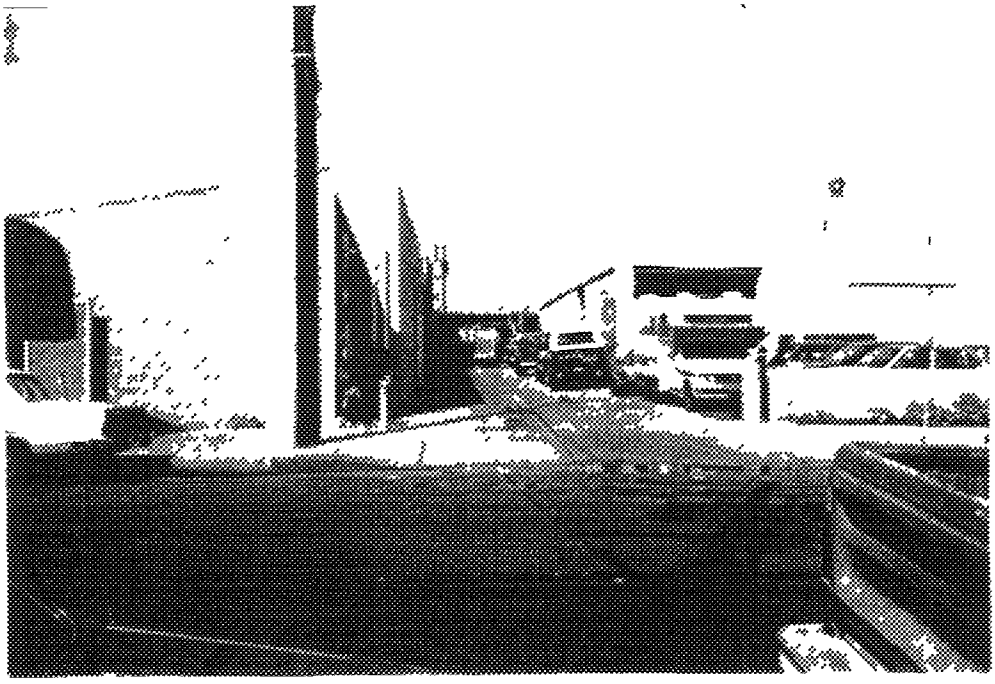
DIRECTION:

Facing West

WEATHER: clear, sunny, warm

PHOTOGRAPHED BY:

Sandra Szalay



DESCRIPTION:

Southern edge of facility, showing south driveway and south warehouse building (grey), where incoming drums of waste solvent and drums of consolidated solids are stored.

DATE: 4/13/88

TIME 10^05 (AM) PM

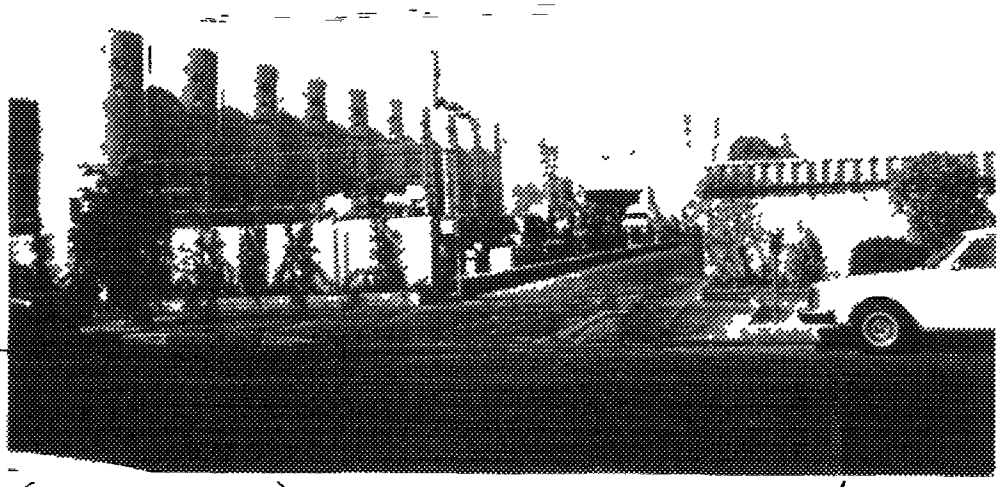
DIRECTION:

Facing West

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Szalay



DESCRIPTION:

North Driveway (note runoff), empty used drum storage area, drum pumping area and AGT's 33-42 and AGT 66, used for waste solvent storage (units 3.20 and 3.25, respectively).

FIELD PHOTOGRAPHY LOG SHEET

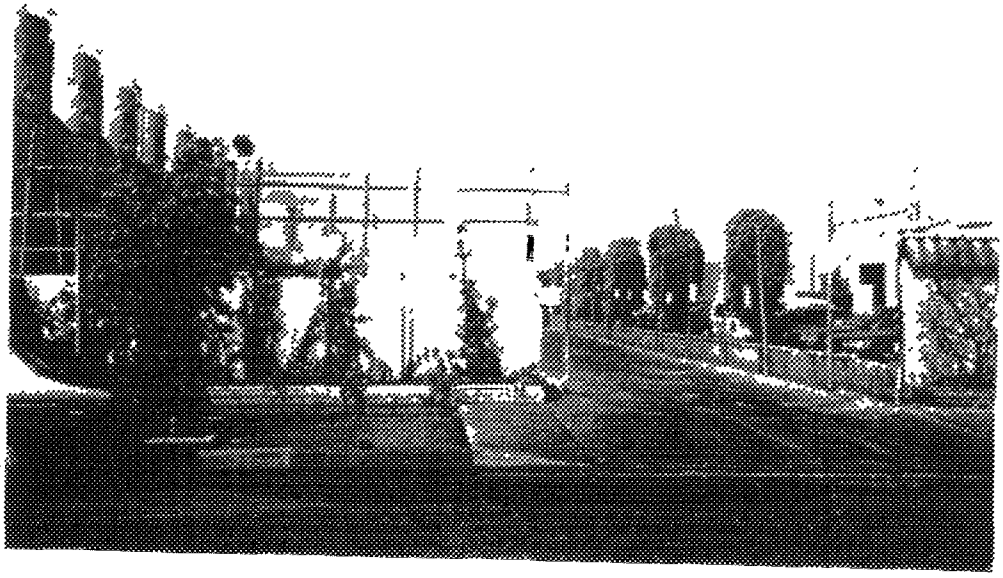
DATE: 4-13-88

TIME: 10:10 (AM) PM

DIRECTION:
Facing West

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szalay



DESCRIPTION:
North Driveway - N.T runoff from rear of facility (to west), down driveway, and onto Bus Avenue.

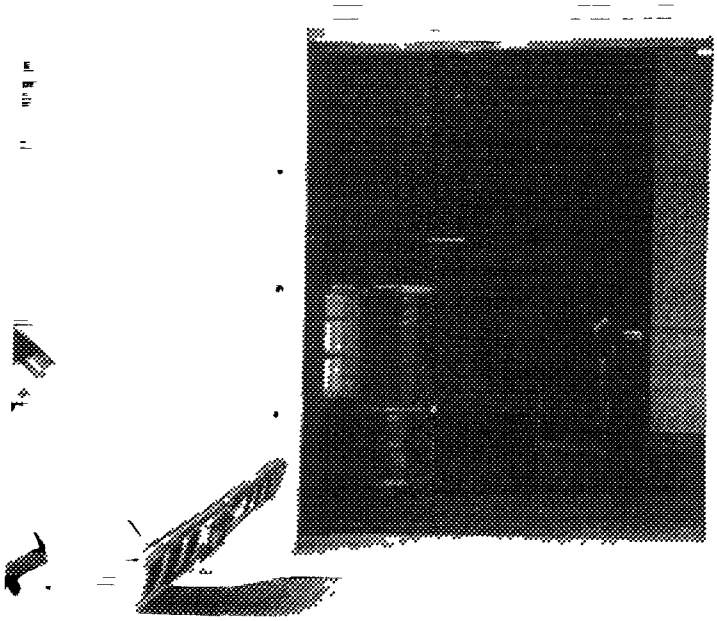
DATE: 6-29-88

TIME 4 AM (PM)

DIRECTION:
Facing north

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szalay



DESCRIPTION:
South Entrance to incoming waste drum storage area II. Note ramp slopes down into south warehouse. This is Unit 3-29.

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

TIME: 4 AM (PM)

DIRECTION:

Facing east

WEATHER: clear

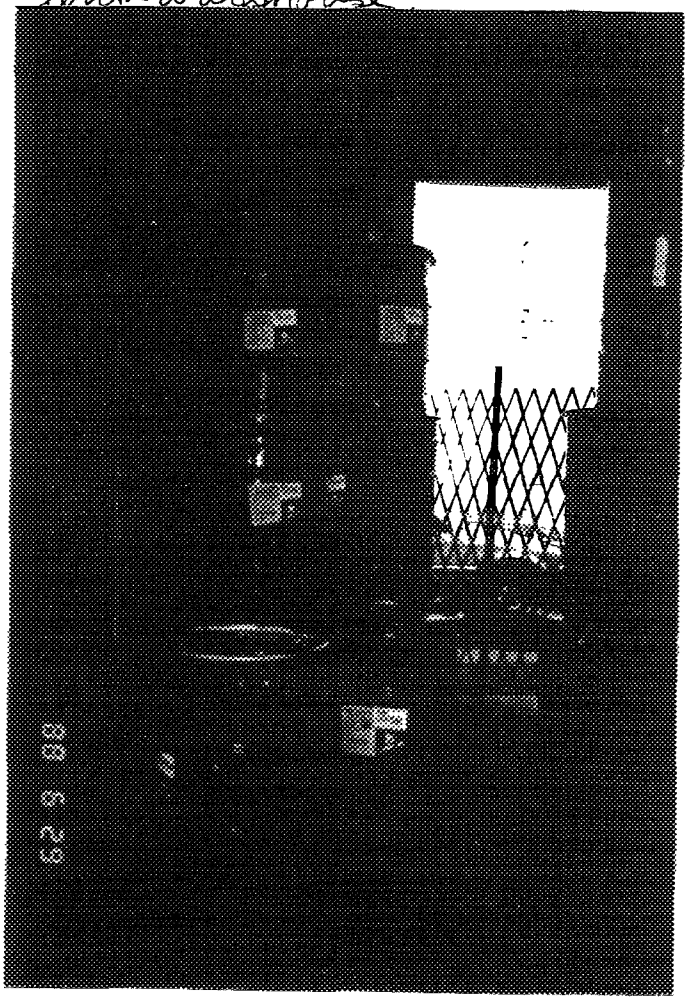
sunny, warm

PHOTOGRAPHED BY:

Sandra Szabat

Part of Unit 3.29

DESCRIPTION: Waste solids awaiting off-site shipment in consolidated solids storage area in south warehouse.



DATE: 6-29-88

TIME 4 AM (PM)

DIRECTION:

Facing east

WEATHER: clear,

sunny, warm

PHOTOGRAPHED BY:

Sandra Szabat

Part of Unit 3.29.

DESCRIPTION: Drums awaiting shipment to Marine Shale for incineration. Note berm in doorway.

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29 88

TIME: 4 AM (PM)

DIRECTION:

Facing north

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Azabat

DESCRIPTION: Drums awaiting shipment to Marine Shale that are not properly stacked. (Part of Unit 3.29).

~~DATE: _____~~

~~TIME ___ AM PM~~

~~DIRECTION:~~

~~WEATHER: _____~~

~~PHOTOGRAPHED BY:~~

~~DESCRIPTION:~~

FIELD PHOTOGRAPHY LOG SHEET

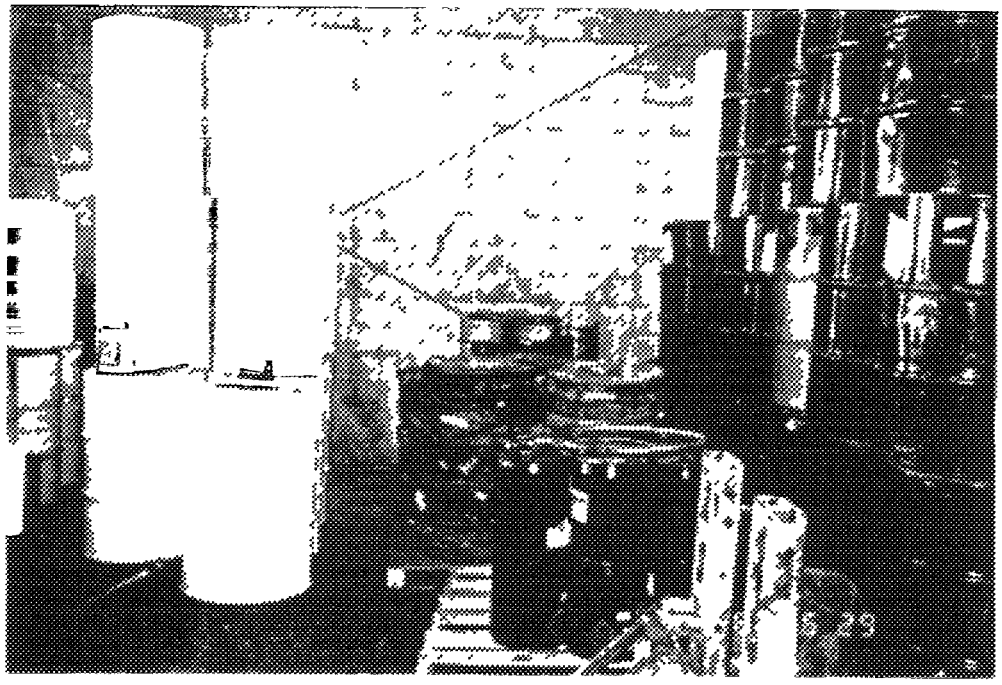
DATE: 6-29 88

TIME: 4°5 AM PM

DIRECTION:
Facing south

WEATHER: clear
sunny warm

PHOTOGRAPHED BY:
Sandra Szabo



DESCRIPTION:
Five-gallon pails on pallet awaiting crushing. South warehouse drum storage (Part of Unit 3.29)

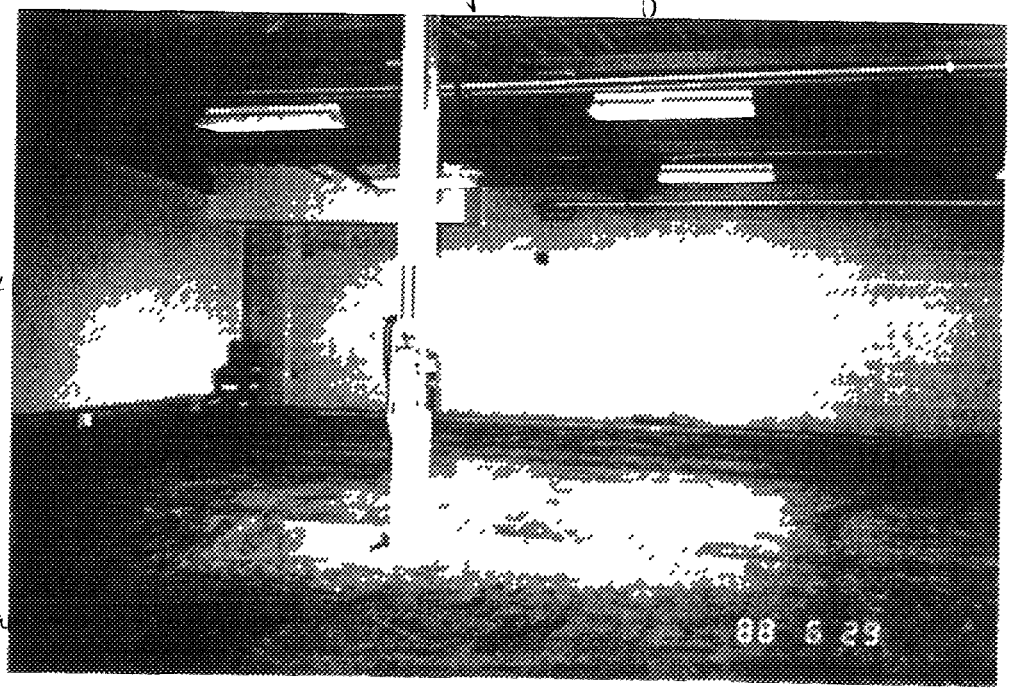
DATE: 6-29-88

TIME 4°5 (AM) PM

DIRECTION:
Facing northwest

WEATHER: clear
warm sunny

PHOTOGRAPHED BY:
Sandra Szabo



DESCRIPTION:
Northwest portion of combined middle-south warehouse used as incoming drum storage area II (Unit 3.29).

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

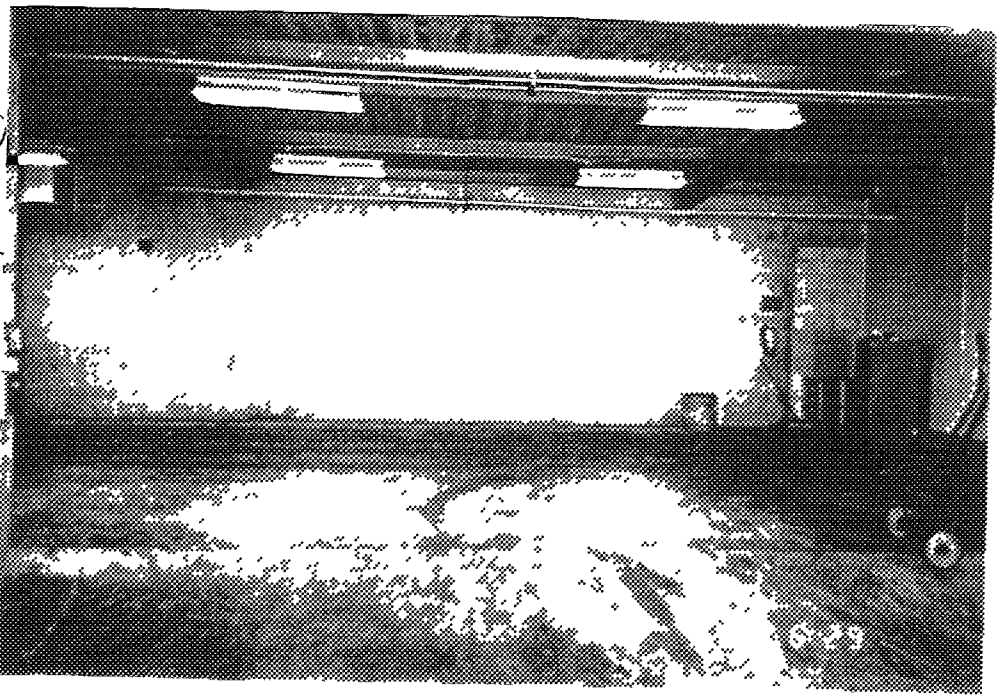
DATE: 6-29-88

TIME: 405 AM (PM)

DIRECTION:
Facing northeast

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szabo



DESCRIPTION:
Northeast portion of combined middle-south warehouse used as a receiving Drum Storage area II. (Unit 3.29)

DATE: 6-29-88

TIME 405 AM (PM)

DIRECTION:
Facing south

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szabo

DESCRIPTION:
Fifty-five gallon drums of waste mixture of perchloroethylene and n-butyl alcohol from a Xerography business. Drums stored in south ~~portion~~ SS - central portion of combined middle-south warehouse until a full volume batch for the thin film evaporator accumulates (Part of Unit 3.29).

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

TIME: 4^10 AM (PM)

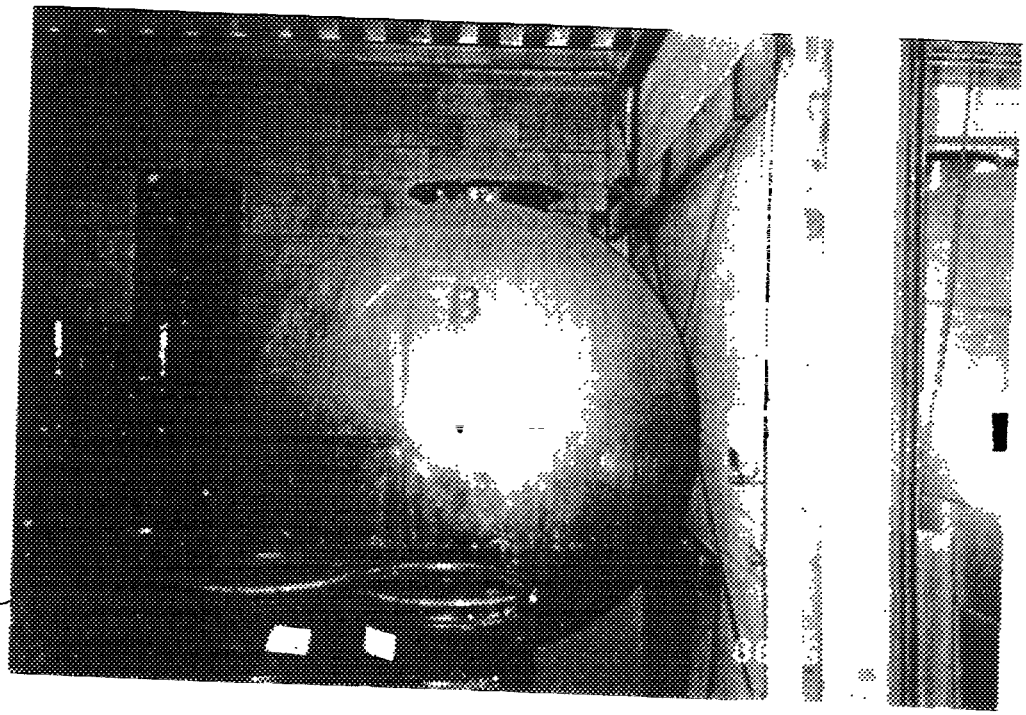
DIRECTION:

Facing south

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Szabra



DESCRIPTION:

2,000 gallon tank formerly used for virgin TF storage in central portion of south warehouse. Former tank location shown schematically on Figure 3. Tank now empty.

DATE: 6-29-88

TIME 4^10 AM (PM)

DIRECTION:

Facing South

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY

Sandra Szabra

DESCRIPTION:

2000 gallon tank formerly used for virgin TF storage in western portion of south warehouse. Former tank location shown schematically in Figure 3. Tank now empty.

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

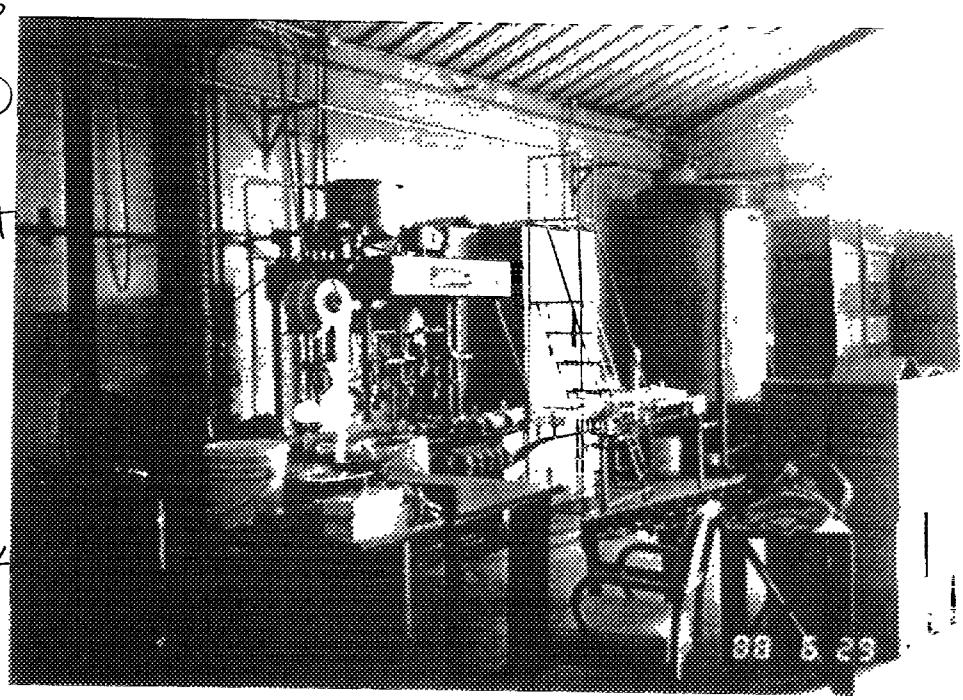
DATE: 6-29-88

TIME: 4:15 AM (PM)

DIRECTION:
Facing southwest

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szabat



DESCRIPTION:
Bottling room in southwest corner of south warehouse; for clean solvents.

DATE: 6-29-88

TIME 4:20 AM (PM)

DIRECTION:
facing west

WEATHER: Clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szabat

DESCRIPTION:
Southwest portion of Rear Yard. Note numerous cracks in concrete paving. Also, vicinity of USTs 13 and 14 and Kleinfelder Soil Boring #1 (in foreground). USTs 13 and 14 are Unit 3.11.

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

TIME: 4:20 AM (PM)

DIRECTION:
Facing northwest

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szalay

DESCRIPTION:
Area of UST 18, note cracks in concrete paving in rear yard (southwest portion of facility)
UST 18 is Unit 3.1.

DATE: 6-29-88

TIME 4:20 AM (PM)

DIRECTION:
Facing northwest

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szalay

DESCRIPTION:
Area of UST 19, in front of right rear wheel of white truck. Note cracks in concrete paving in rear yard (southwest portion of facility).
UST 19 is Unit 3.12.

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-21-88

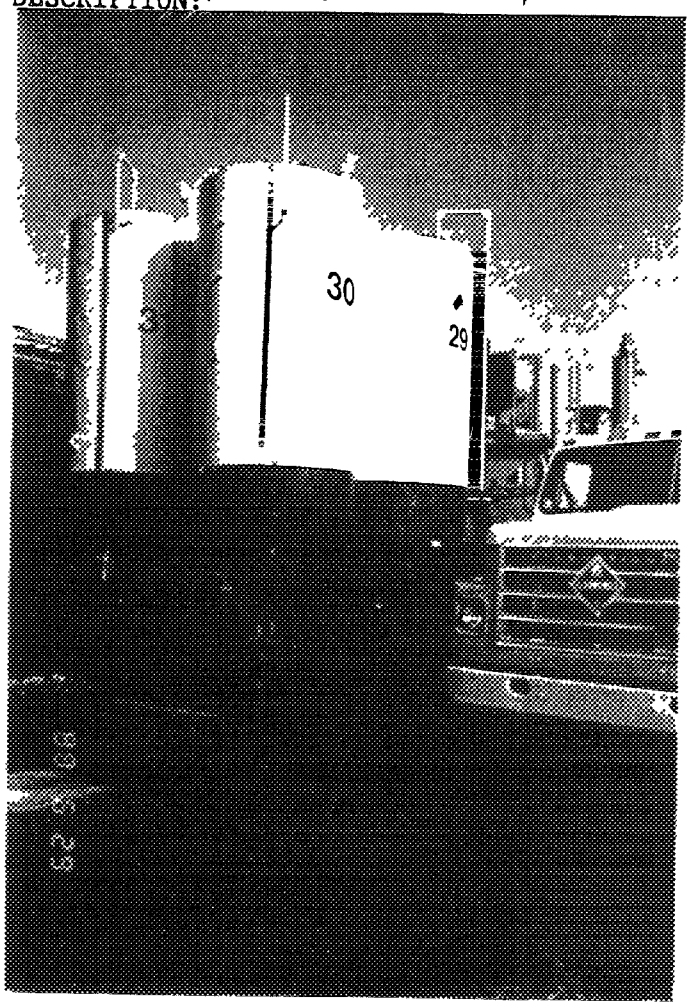
TIME: 5:22 AM (PM)

DIRECTION:
Facing Southeast

WEATHER: Clear
warm, sunny

PHOTOGRAPHED BY:
Sandra Szalat

DESCRIPTION: AGTs 29-31 (Part of Unit 3.22)
Note Stains on AGT 31



DATE: 6-29-88

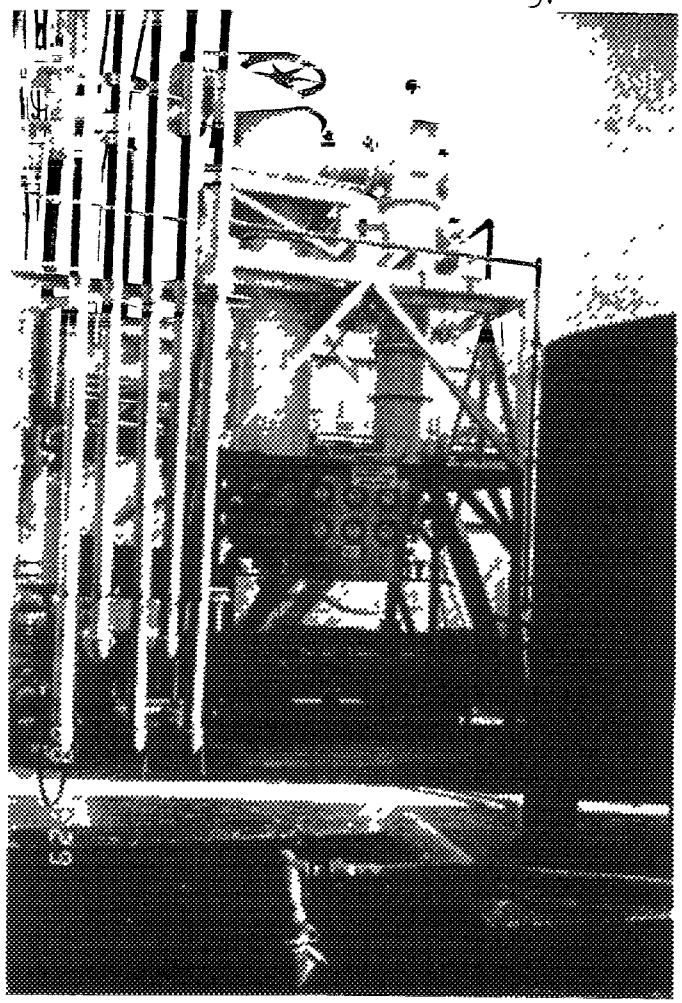
TIME 5:22 AM (PM)

DIRECTION:
Facing South

WEATHER: Clear,
warm, sunny

PHOTOGRAPHED BY:
Sandra Szalat

DESCRIPTION: Thin Film Evaporator (Part of Unit 3.22).



FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29 88

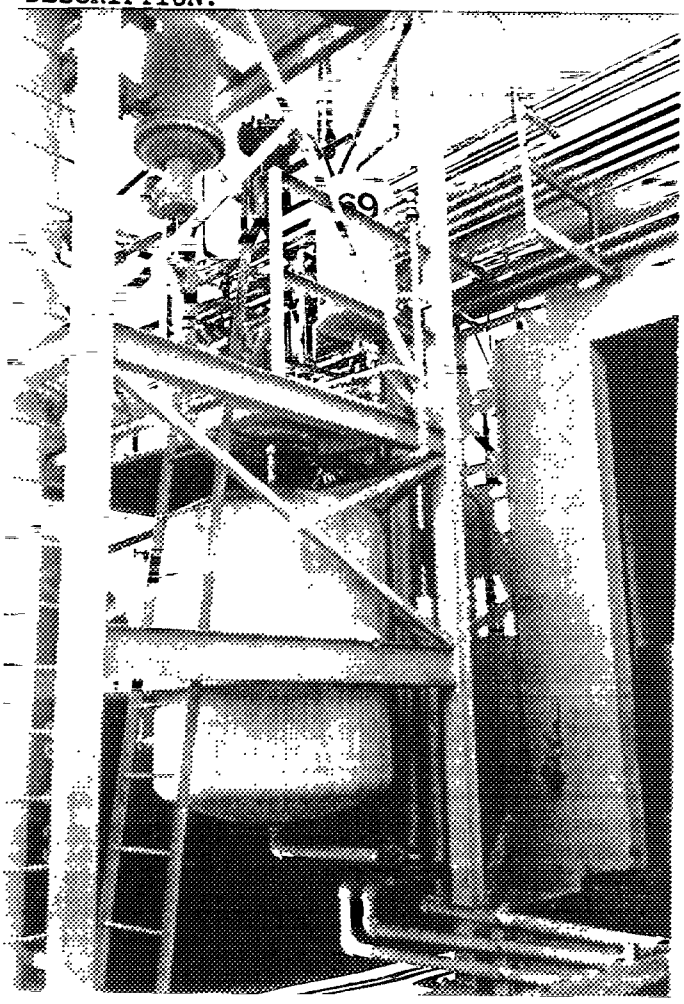
TIME: 524 AM (PM)

DIRECTION:
Facing northeast

WEATHER: Clear, warm, sunny

PHOTOGRAPHED BY:
Samha Azgbat

DESCRIPTION:
AGT569 & 70 (Part of Unit 3.24). AGT70 does not have a Number on it. Note stains on AGT70.



DATE: 6-29-88

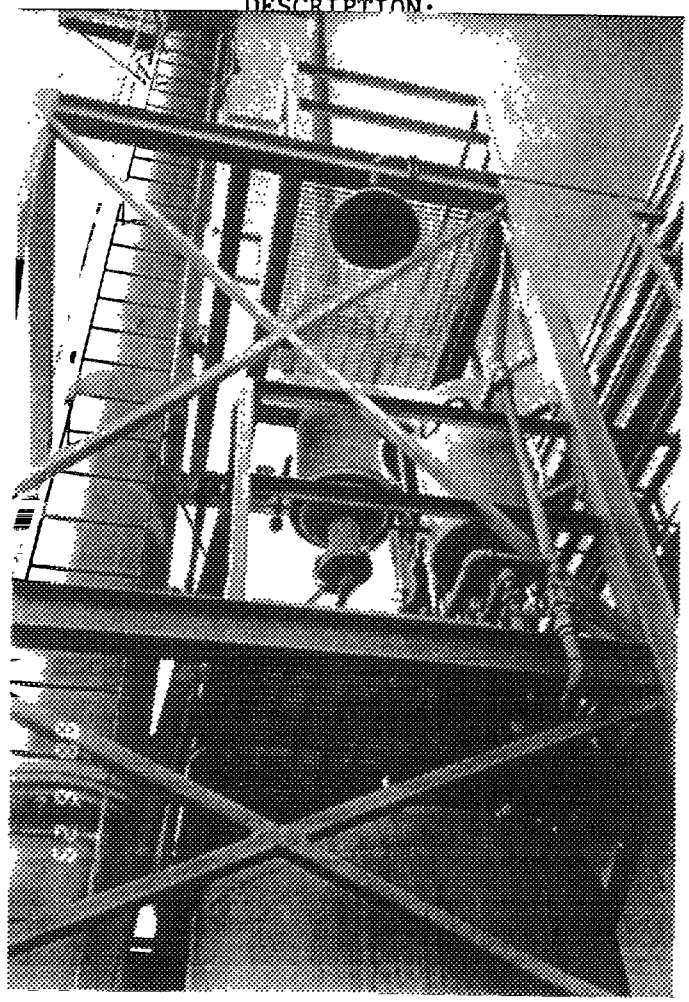
TIME 524 AM (PM)

DIRECTION:
Facing northandup

WEATHER: Clear, warm, sunny

PHOTOGRAPHED BY:
Samha Azgbat

DESCRIPTION:
View of Column (Silver), Condenser, AGT 69 (Part of unit 3.24)



FIELD PHOTOGRAPHY LOG SHEET

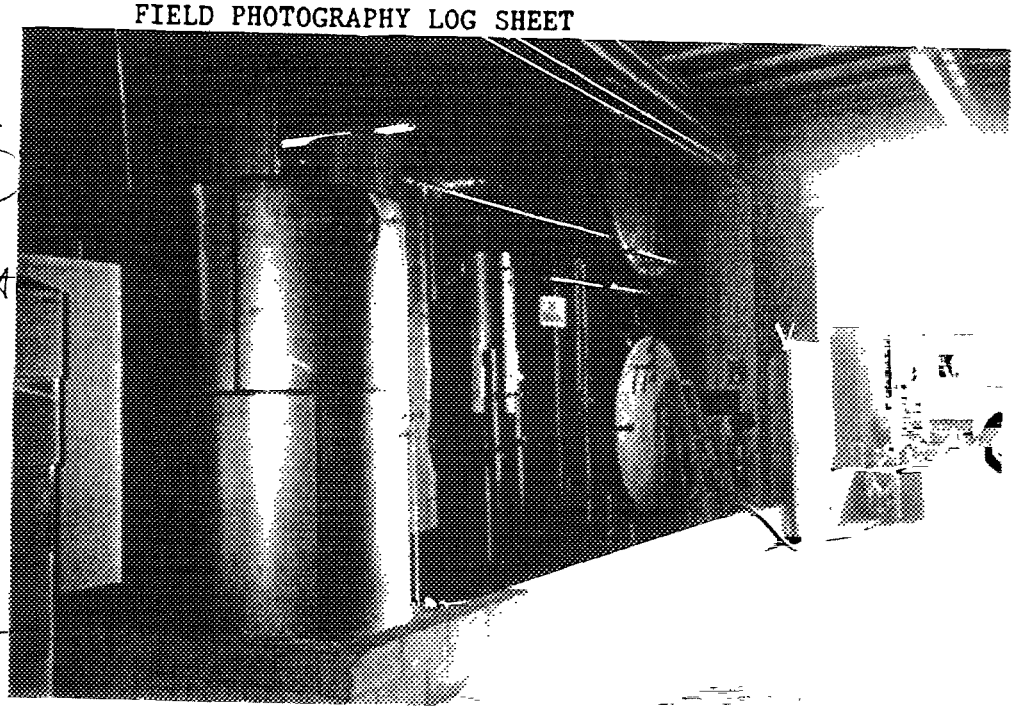
DATE: 6-29-88

TIME: 526 AM PM

DIRECTION:
Facing southwest

WEATHER: clear, warm sunny

PHOTOGRAPHED BY:
Sandra Talbot



DESCRIPTION: Unit 3.23, Thin Film Supplemental Treatment Tanks in northwarehouse (Southwest corner)

DATE: _____

TIME ____ AM PM

DIRECTION:

_____

WEATHER: _____

_____

PHOTOGRAPHED BY:

_____

DESCRIPTION:

_____

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

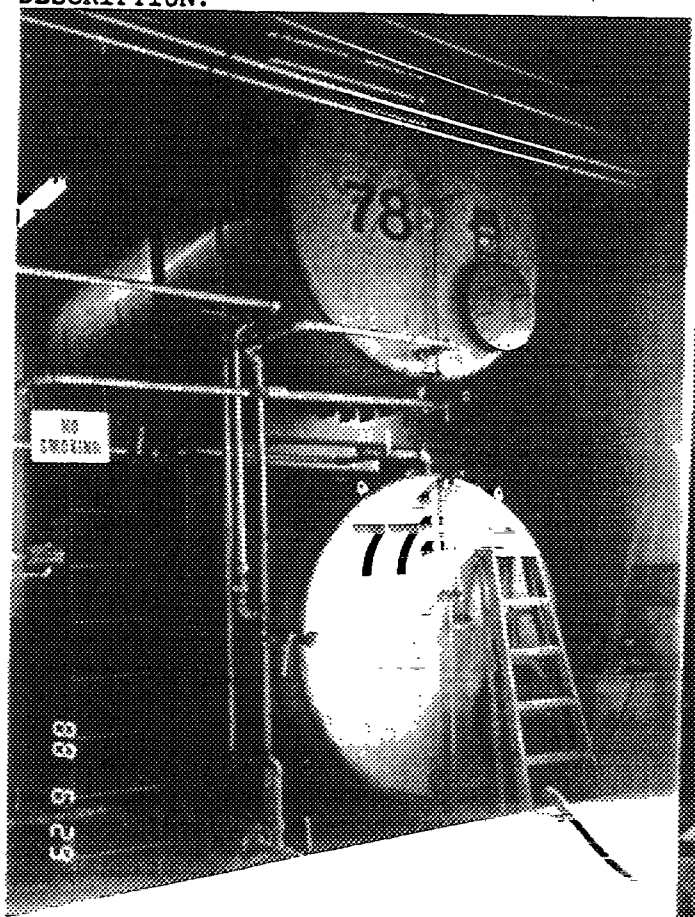
TIME: 5:26 AM (PM)

DIRECTION:
Facing Southwest

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szabat

DESCRIPTION:
AGTs 77 & 78, Part of Unit 3.23. AGT 78 is water wash tank.



DATE: 6-29-88

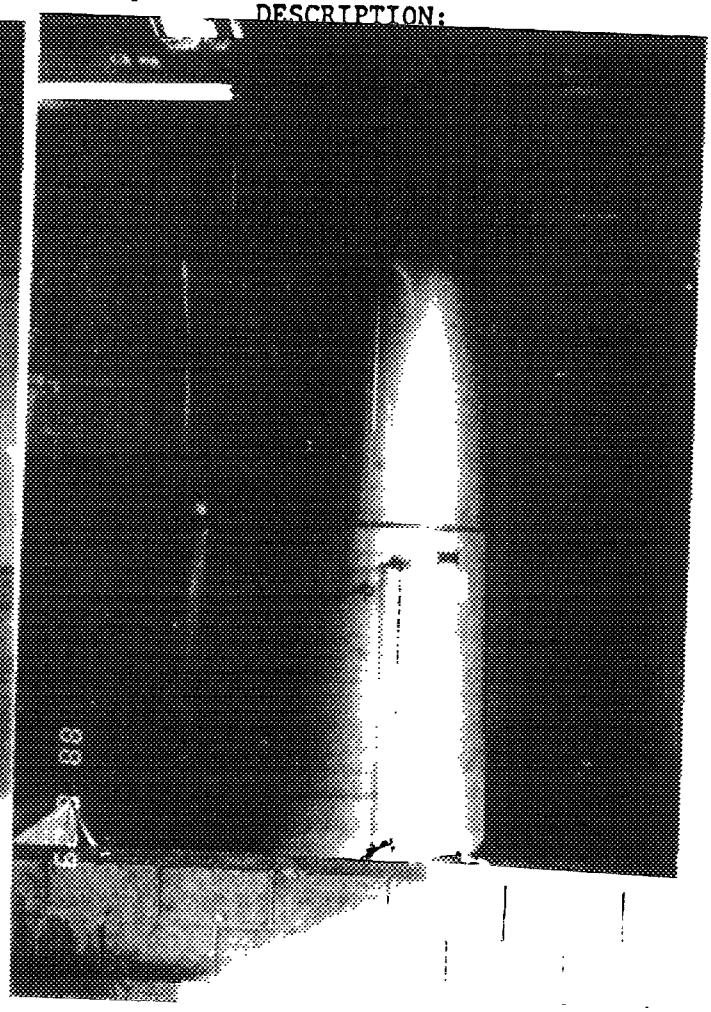
TIME 5:26 AM (PM)

DIRECTION:
Facing south

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szabat

DESCRIPTION:
AGT 79, part of Unit 3.23. Holding Tank for wash wastewater.



FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29 88

TIME: 5^26 AM (PM)

DIRECTION:

Facing South

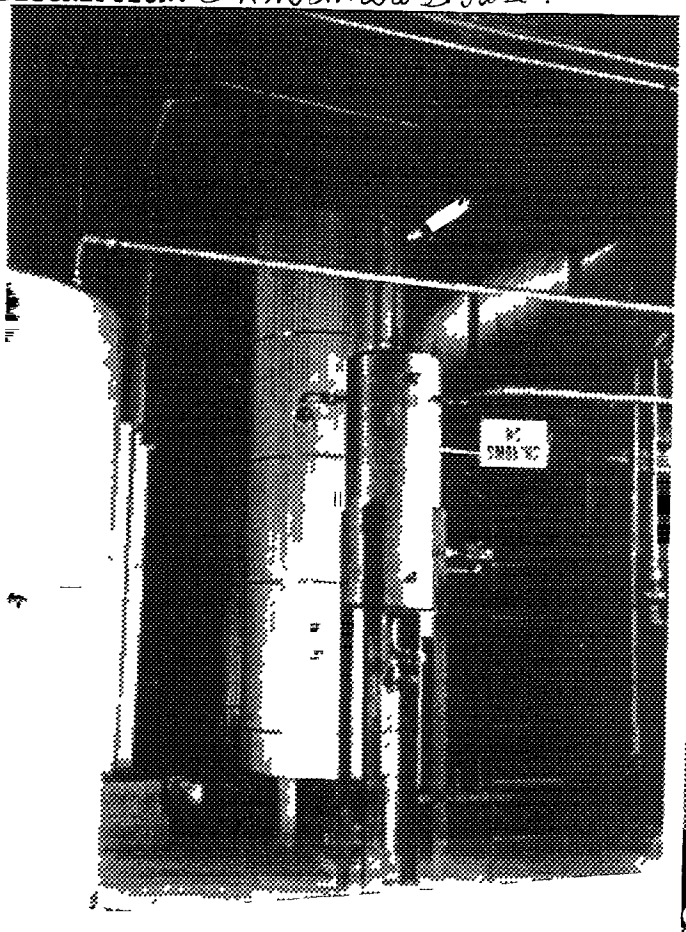
WEATHER: Clear

warm, sunny

PHOTOGRAPHED BY:

Sandra Szalat

DESCRIPTION: Water separator (foreground) and three dryers (background). Part of Un # 3.23. In north warehouse.



DATE: 6-29-88

TIME 5^28 AM (PM)

DIRECTION:

Facing northwest

WEATHER: Clear,

warm, sunny

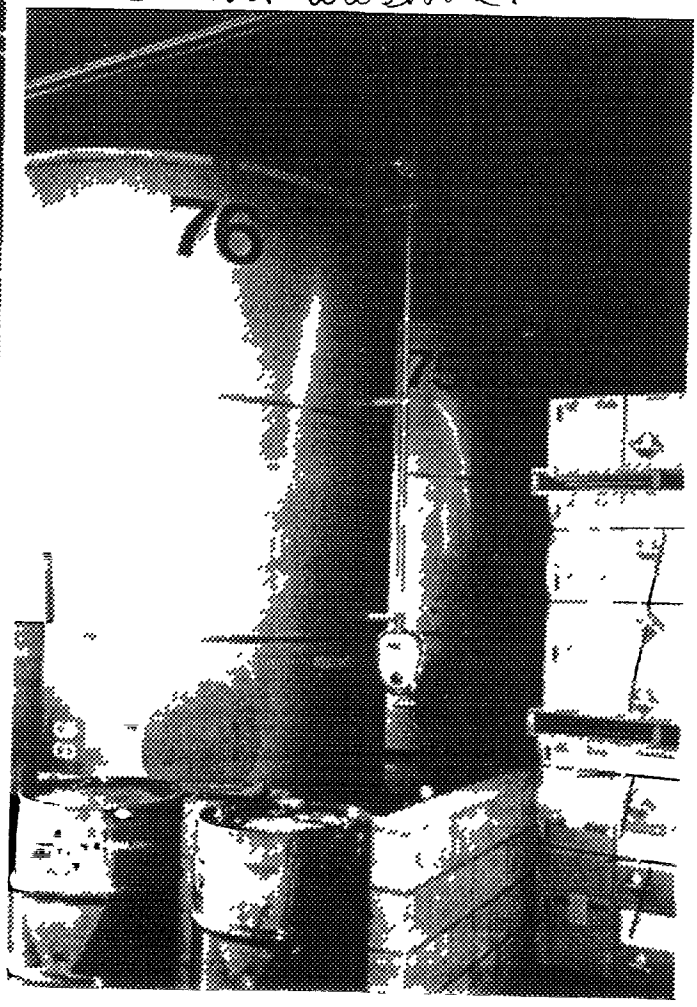
PHOTOGRAPHED BY:

Sandra Szalat

AGT 76 - Virgin TF
AGT 75 - Recycled TF

DESCRIPTION:

In north warehouse.



FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

TIME: 5:28 AM (PM)

DIRECTION:
Facing northwest

WEATHER: Clear.
Warm, sunny

PHOTOGRAPHED BY:
Sandra Szalai

DESCRIPTION: Product storage in north portion of north warehouse. AGTs 75 & 76 on west side of warehouse.

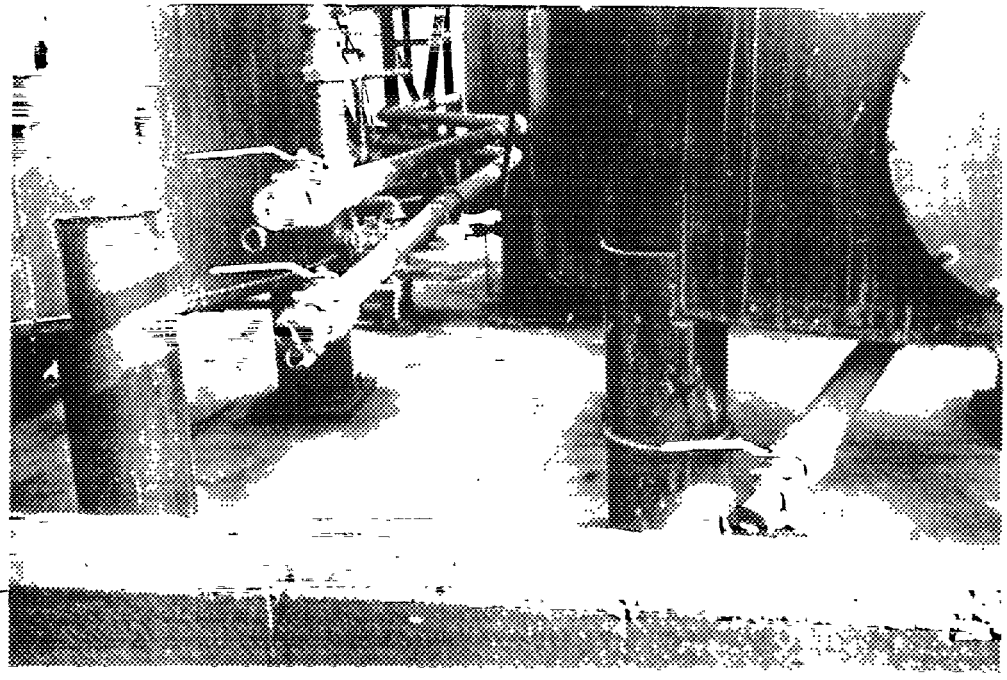
DATE: 6-29-88

TIME 5:32 AM (PM)

DIRECTION:
Facing South

WEATHER: Clear
warm sunny

PHOTOGRAPHED BY:
Sandra Szalai



DESCRIPTION:

Base of AGTs 29-31 (Part of 3.22). Note stains on concrete.

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

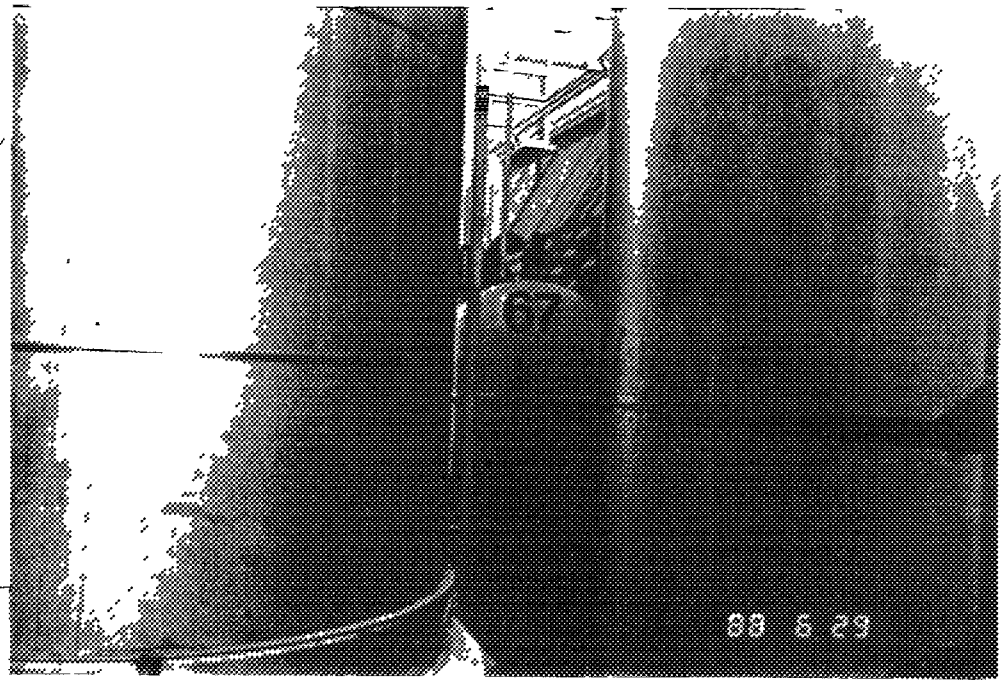
DATE: 6-29 88

TIME: 5 32 AM (PM)

DIRECTION:
Facing east

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Azalat



DESCRIPTION:
West end of AGT 67 (Part of Unit 3.24) - Receives alcohol cuts from treatment of wash wastewater in rebuild column.

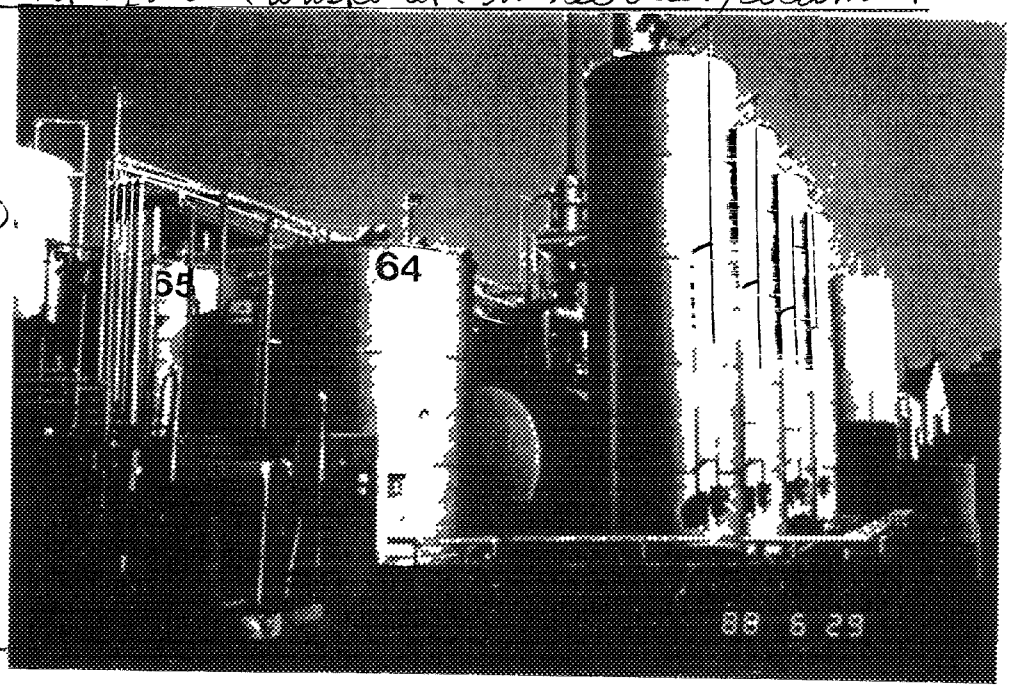
DATE: 029-88

TIME 5 32 AM (PM)

DIRECTION:
Facing south

WEATHER: clear warm sunny

PHOTOGRAPHED BY:
Sandra Azalat



DESCRIPTION: AGT 64 (Unit 3 34), AGT 65 (Part of unit 3 24), and AGTs 60-63. AGT 61 is unit 3.33.

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6 21 88

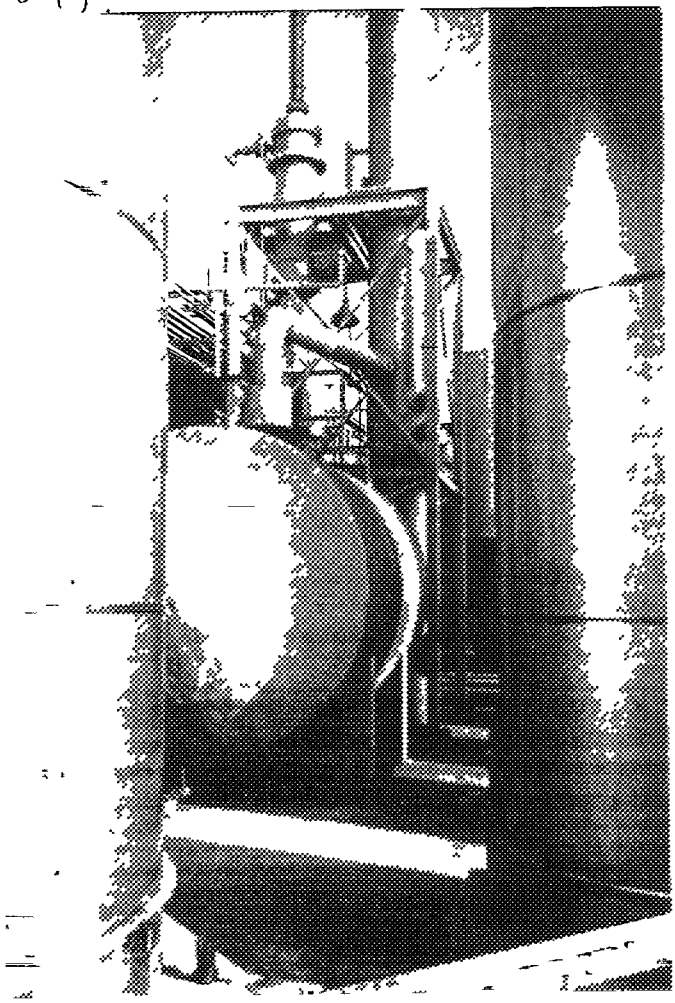
TIME: 5 37 AM (PM)

DIRECTION:
Facing south

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Azabat

DESCRIPTION: AGT 68 (reboiler), showing connection to the fractionation column (Pratt Unit 324)



DATE: _____

TIME ___ AM PM

DIRECTION:

WEATHER: _____

PHOTOGRAPHED BY:

DESCRIPTION:

FIELD PHOTOGRAPHY LOG SHEET

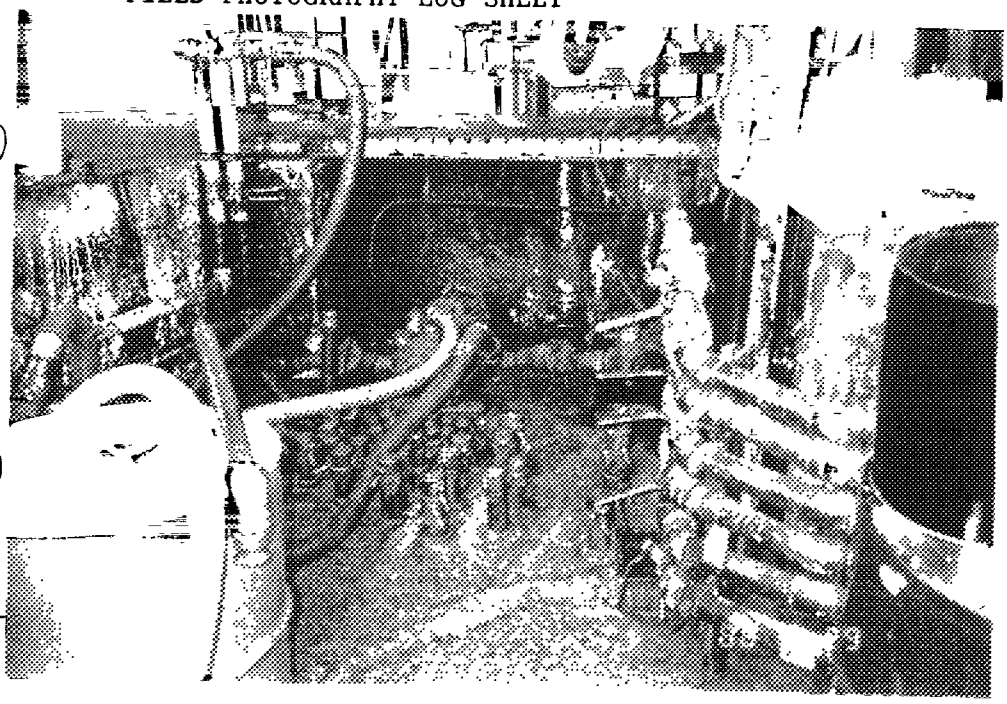
DATE: 6-29-88

TIME: 5 39 AM (PM)

DIRECTION:
Facing West

WEATHER: Clear.
Warm, sunny

PHOTOGRAPHED BY:
Sandra Szalai



DESCRIPTION: Pumping area for 55 gallon drums / Filldock area in northwest-northcentral portion of rear yard (where 55-gallon drums are filled with virgin & recycled solvent.

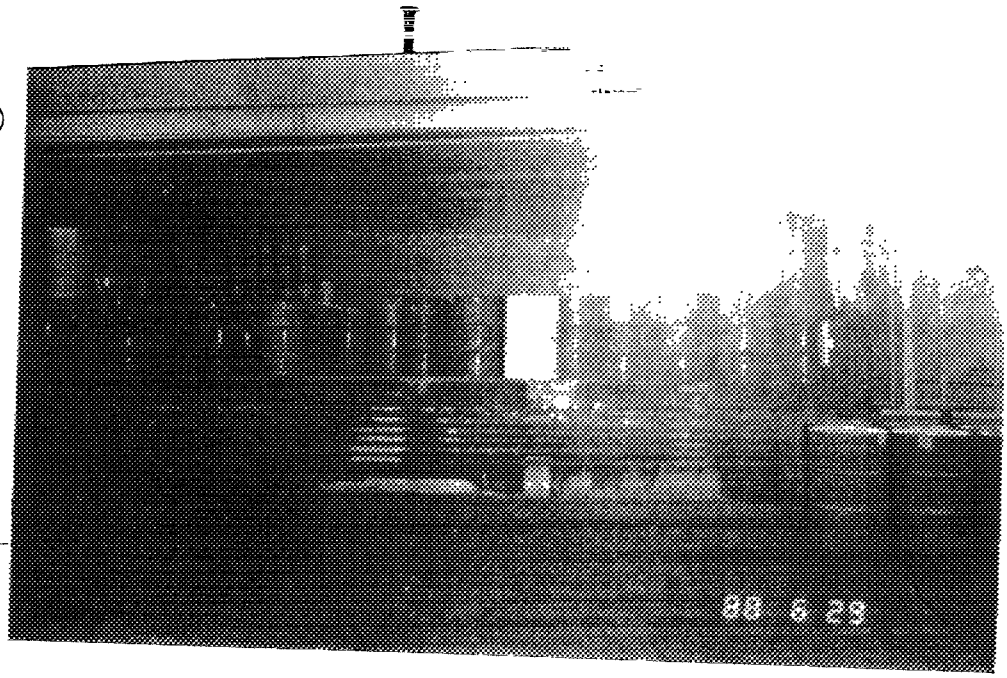
DATE: 6-29-88

TIME 5 39 AM (PM)

DIRECTION:
Facing west.

WEATHER: Clear,
warm, sunny

PHOTOGRAPHED BY:
Sandra Szalai



DESCRIPTION:

Fill dock area, just north of pumping area shown above. Note cracks in concrete-paving of rear yard, an "area of concern."

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29 88

TIME: 5 40 AM (PM)

DIRECTION:

Facing south

WEATHER: Clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Szabat

DESCRIPTION: Rear yard where Rho-Chem delivery trucks park. Square metal plates are covers below which the USTs are located. Note cracks in concrete paving and "SALVAGE" drum in stakebed truck

DATE: 6-29-88

TIME 5 40 AM (PM)

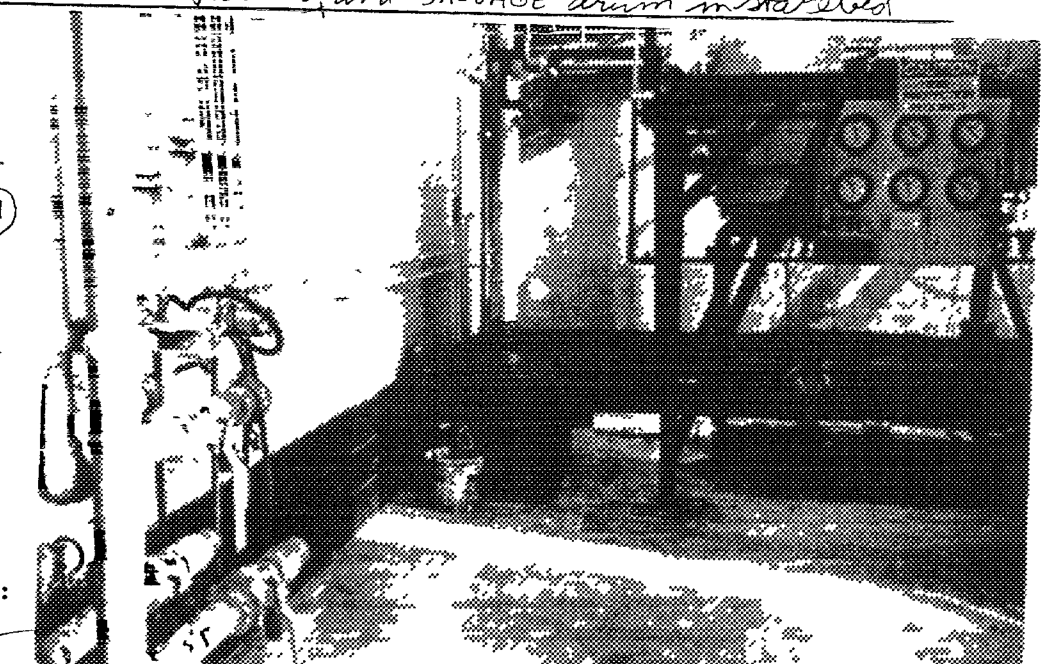
DIRECTION:

Facing south

WEATHER: Clear, warm sunny

PHOTOGRAPHED BY:

Sandra Szabat



DESCRIPTION: Base of Thin Film Evaporator (Unit 3.22) and L.A County Sanitation District Wastewater Discharge Sample Box. Box is locked. Only access is by District Personnel. Only permitted industrial wastewater discharges are boiler blowdown and cooling tower blowdown

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

TIME: 4:25 AM (PM)

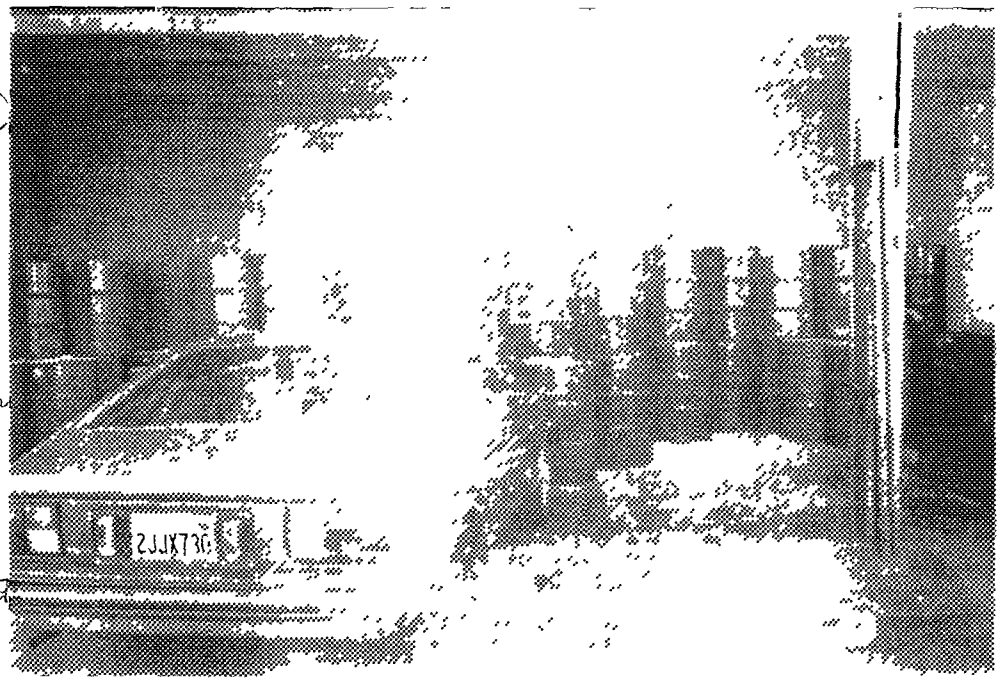
DIRECTION:

Facing west

WEATHER: clear, warm, sunn

PHOTOGRAPHED BY:

Sandra Szabat



DESCRIPTION:

West warehouse product storage, south end of warehouse southwest corner of facility.

DATE: 6-29-88

TIME 4:25 AM (PM)

DIRECTION:

Facing west

WEATHER: clear, warm, sunn

PHOTOGRAPHED BY:

Sandra Szabat

DESCRIPTION:

West warehouse product storage north end of warehouse, southwest corner of facility

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

TIME: 4 30 AM (PM)

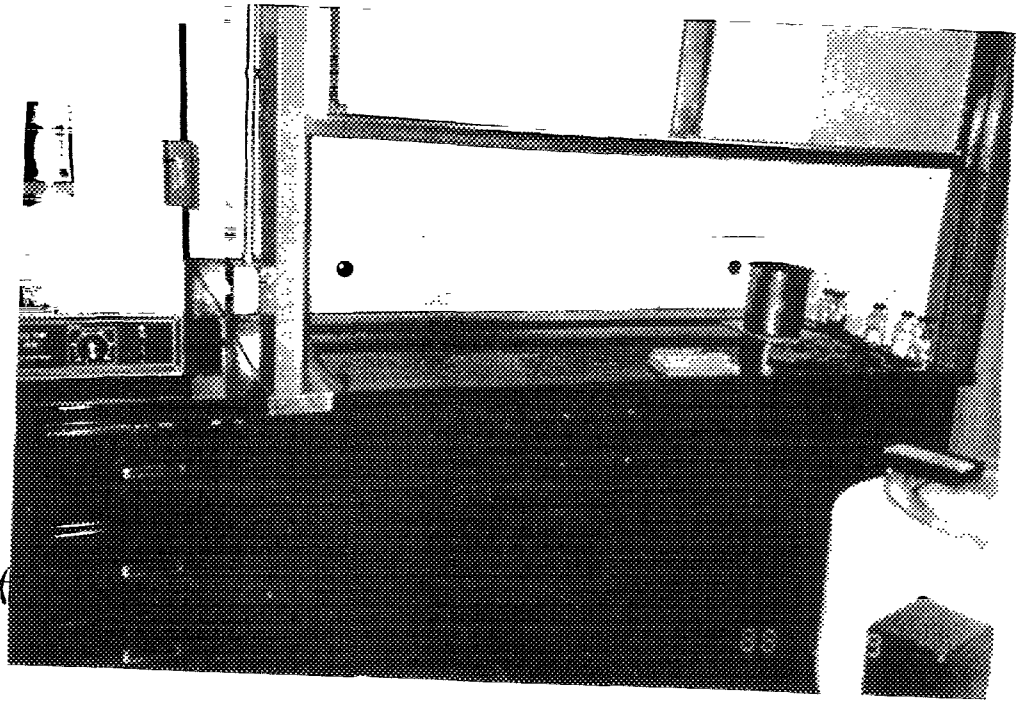
DIRECTION:

Facing north

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Szabat



DESCRIPTION:

Hood in lab where aliquots from 4 oz. bottles of waste solvent samples are transferred to sample vials prior to GC analysis. Note sample bottles on right side of hood. Lab is Unit 3.28.

DATE: _____

TIME ___ AM PM

DIRECTION:

_____

WEATHER: _____

_____

PHOTOGRAPHED BY:

_____

DESCRIPTION:

_____

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29 88

TIME: 4:30 AM (PM)

DIRECTION:

Facing East

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Szabat

DESCRIPTION:

Samples from inbound virgin solvents and outbound solvent blends. Stored in this cabinet for up to three months. In on-site lab, Unit 328

DATE: ____

TIME ____ AM PM

DIRECTION:

WEATHER: ____

PHOTOGRAPHED BY:

DESCRIPTION:

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

TIME: 4 35 AM (PM)

DIRECTION:

Facing southeast

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Szalbat

DESCRIPTION: Unit 3.15, Current Drum Pumping Area. Drums of waste solvent awaiting pumping into AGTs 33-42 (white tanks in background). Waste pumping system (valves & hoses) shown on east side of ribbon mixer (white with dark stains on the exterior)

DATE: 6-29-88

TIME 4 35 AM (PM)

DIRECTION:

Facing south

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Szalbat

DESCRIPTION: AGT 66, currently used for storage of a mixture of waste 1,1,1-TCA and methylene chloride

d/guide/bt AGT 66 is Unit 3.25

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29 88

TIME: 4 35 AM (PM)

DIRECTION:

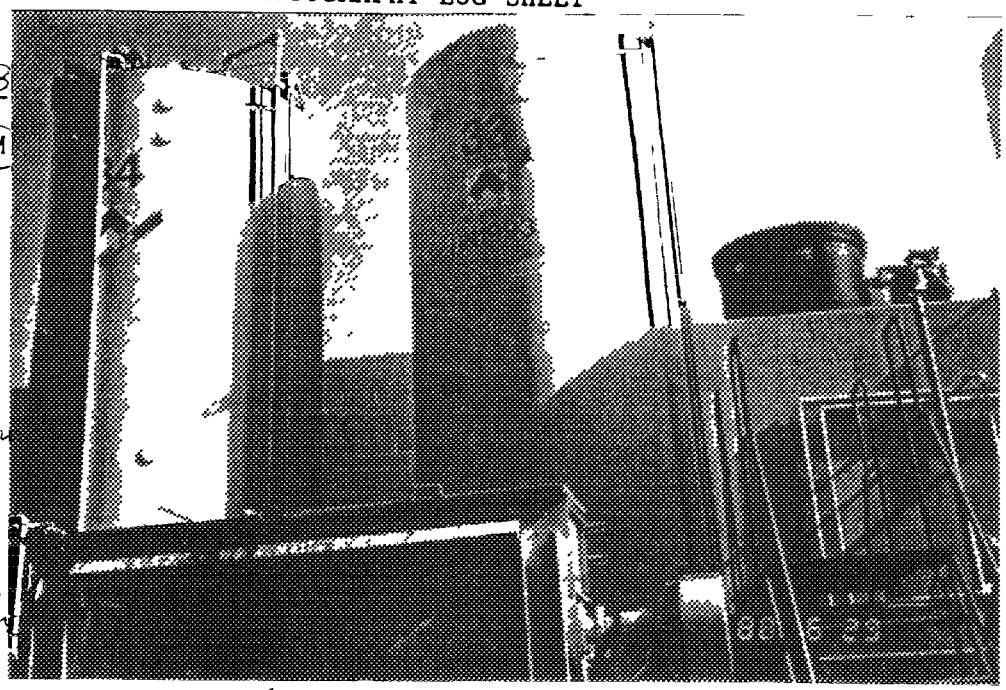
Facing south

WEATHER: clear,

warm, sunny

PHOTOGRAPHED BY:

Sandra Szabo



DESCRIPTION: Units 3.20 and 3.26

AGTs 33 and 34, with Ribbon Mixer in foreground (note stains)

AGT 33 currently stores waste 1,1,1-TCA.

AGT 34 is currently the mix tank for flammable waste solvent blends.

DATE: 6-29-88

TIME 4 35 AM (PM)

DIRECTION:

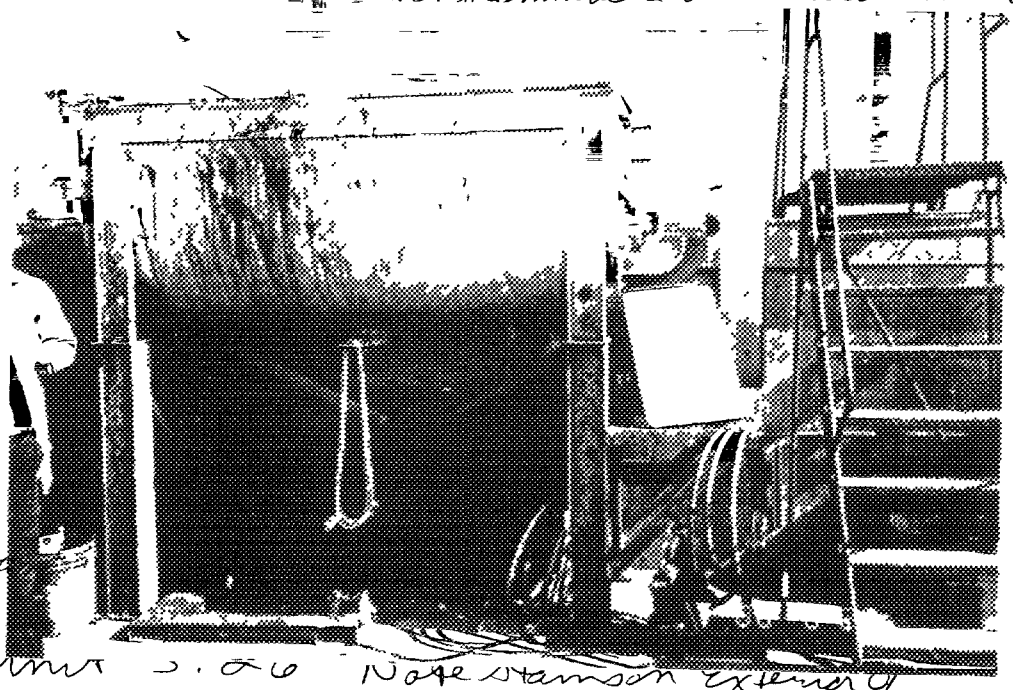
Facing south

WEATHER: clear,

warm, sunny

PHOTOGRAPHED BY:

Sandra Szabo



DESCRIPTION: Units 3.26 Note stanson extending

Ribbon Mixer - Drums are filled underneath the mixer (Unit 3.26) Note stains on exterior of unit.

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

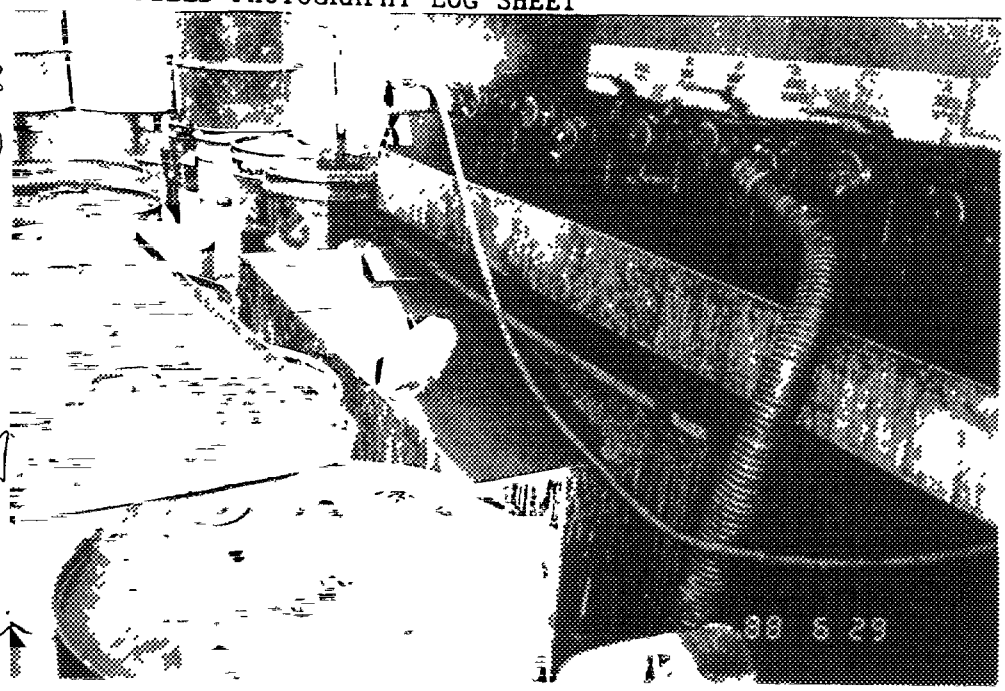
DATE: 6-29-88

TIME: 4^40 AM (PM)

DIRECTION:
Facing east

WEATHER: Clear
warm, sunny

PHOTOGRAPHED BY:
Sandra Szalay



DESCRIPTION: Unit 3 32
Waste filtration tank and pumping system.
Screen on top of tanks filters out particulates as
contents of drums are pumped to storage AGTs

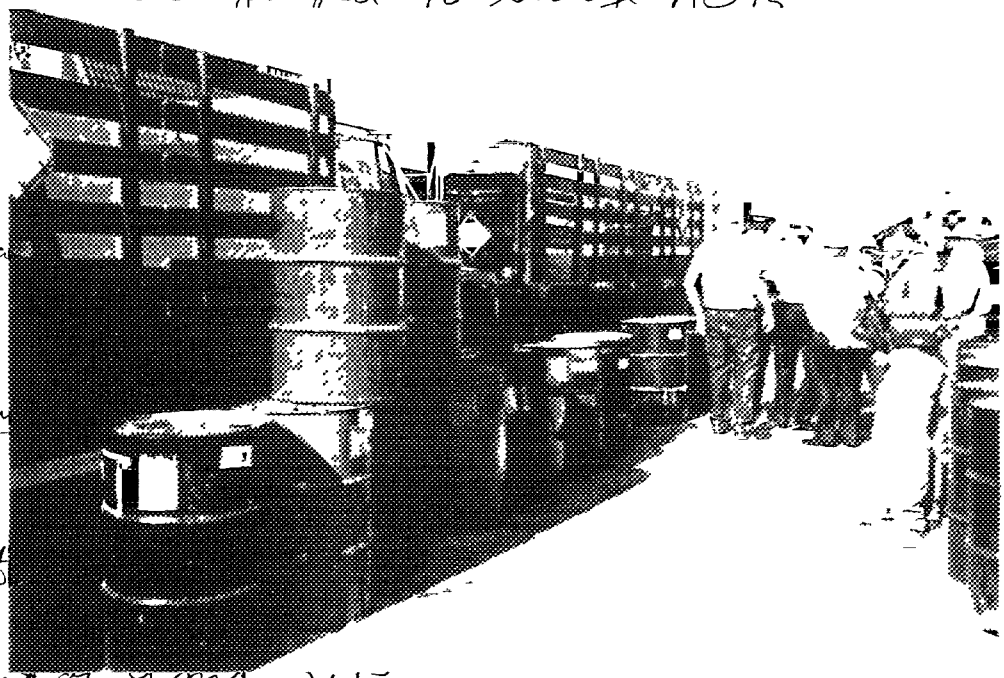
DATE: 6-29-88

TIME 4^40 AM (PM)

DIRECTION:
Facing northea

WEATHER: Clear,
warm, sunn

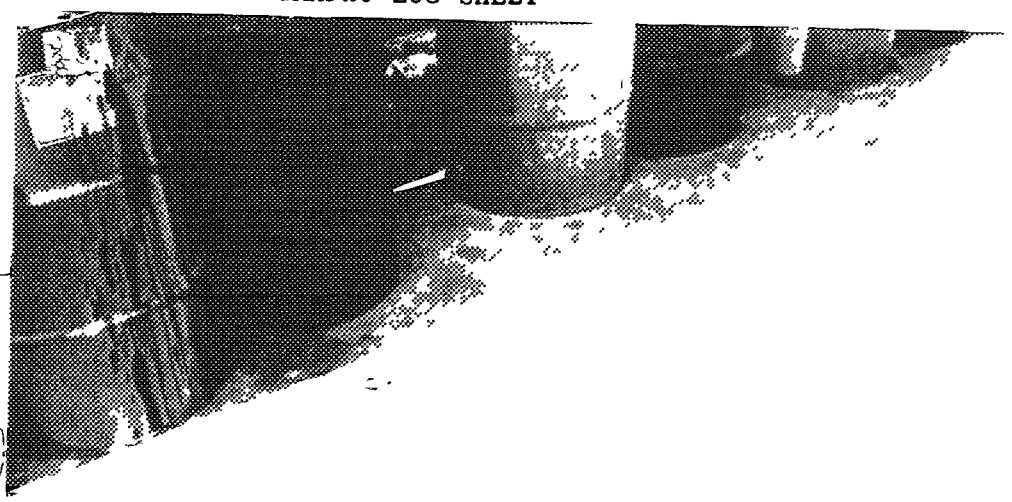
PHOTOGRAPHED BY:
Sandra Szalay



DESCRIPTION: Part of Unit 3.15
Drums of waste solids awaiting consolidation -
Part of Unit 3.15.

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET



DATE: 6-29-88

TIME: 440 AM (PM)

DIRECTION:

facing northwest

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Szalay

DESCRIPTION: Part of Unit 3.15. Stain on concrete and cracks in concrete in front of drums of waste solids awaiting consolidation.

DATE: _____

TIME ___ AM PM

DIRECTION:

_____

WEATHER: _____

_____

PHOTOGRAPHED BY:

_____

DESCRIPTION:

_____

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29 88

TIME: 4 45 AM (PM)

DIRECTION:

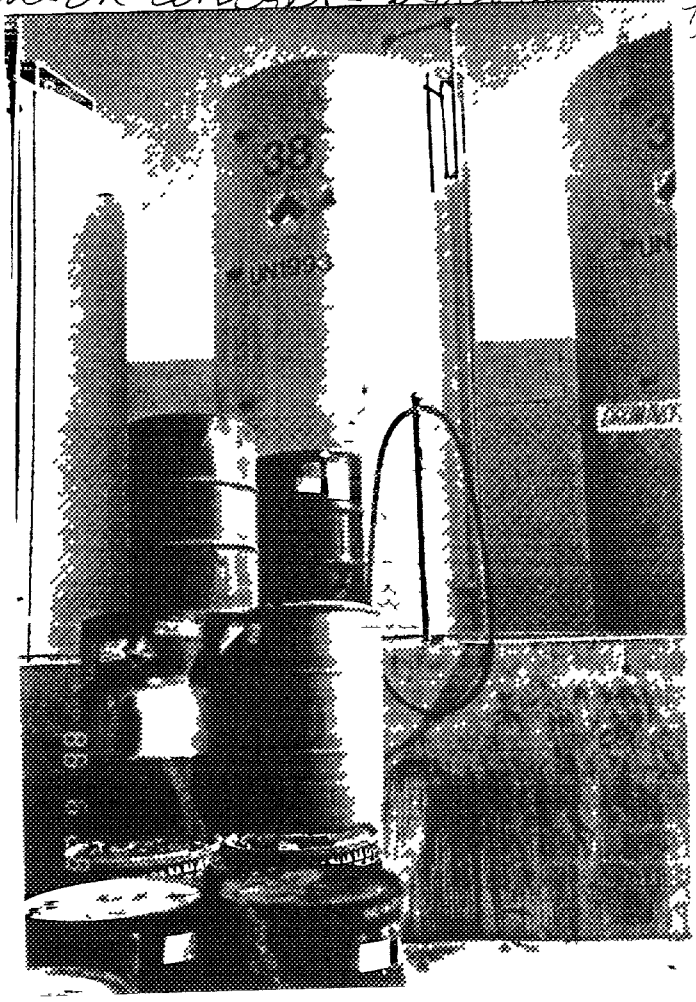
Facing south

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Szabat

DESCRIPTION: AGT 38, Part of Unit 320, used for storage of flammable waste solvents Note stains on concrete block wall in front of tanks



DATE: _____

TIME ___ AM PM

DIRECTION:

_____

WEATHER: _____

_____

PHOTOGRAPHED BY:

_____

DESCRIPTION:

FIELD PHOTOGRAPHY LOG SHEET

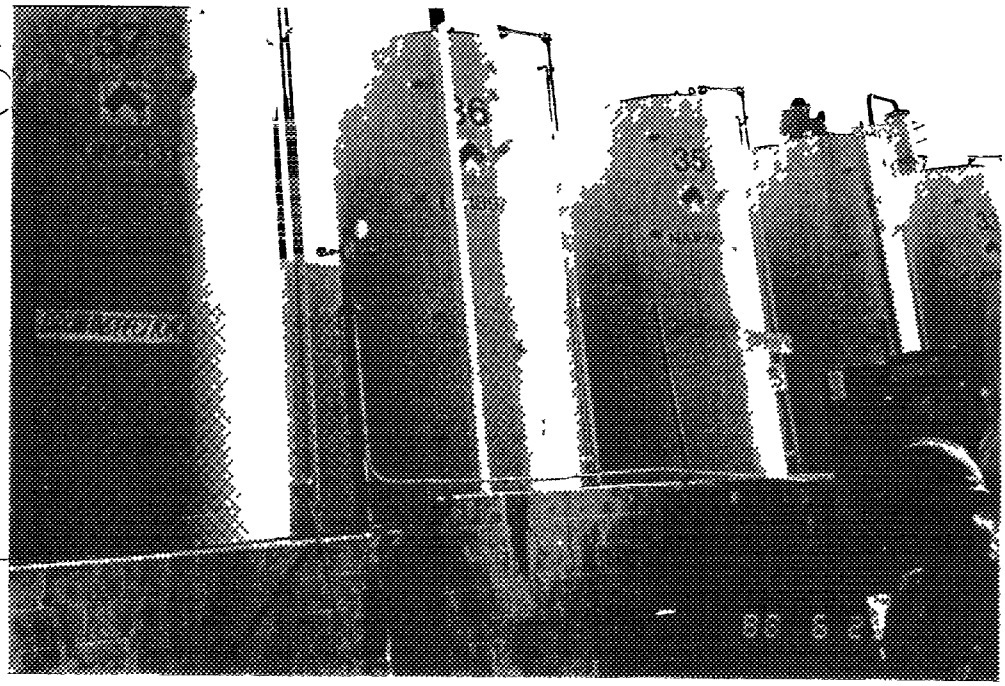
DATE: 6-29 88

TIME: 445 AM (PM)

DIRECTION:
Facing south

WEATHER: Clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szabat



DESCRIPTION:
AGTs 33 37, Part of unit 320, used for storage of incoming waste solvent. Note steam on concrete block wall in front of tanks.

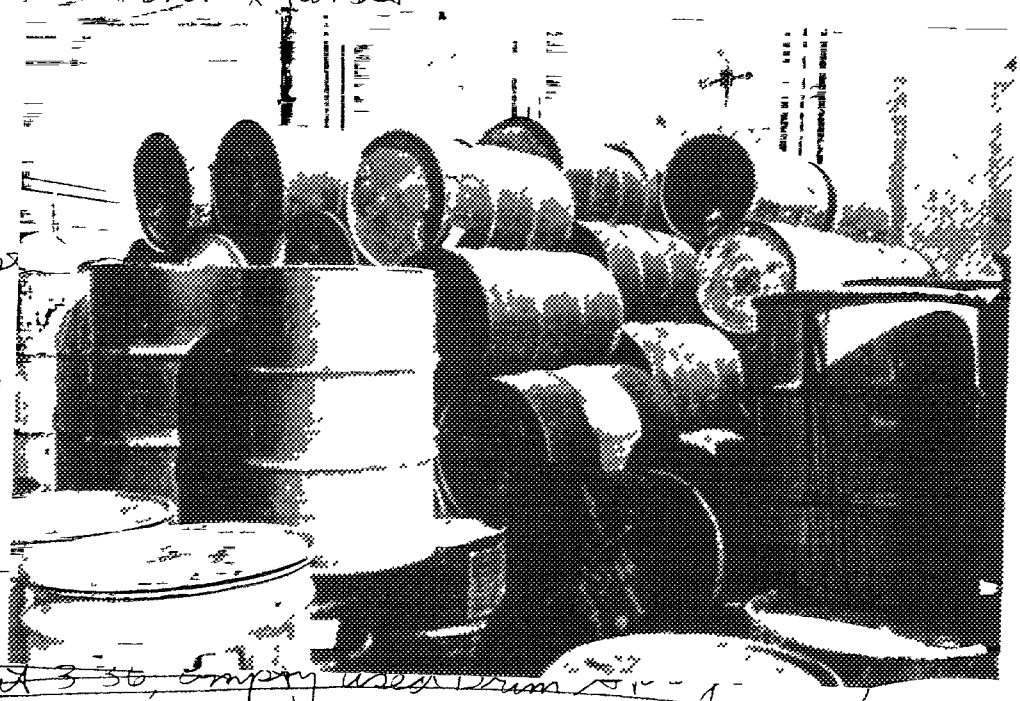
DATE: 6-29 88

TIME 445 AM (PM)

DIRECTION:
Facing Southeast

WEATHER: Clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szabat



DESCRIPTION: ~~Unit 336, empty used Drum~~
Note 3 drums with open bung holes. FIT observed PID reading of 10 ppm in this unit

d/guide/bt Unit 336, empty used Drum storage is in.

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

TIME: 4^45 AM (PM)

DIRECTION:
facing west

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szabra

DESCRIPTION: USTs 33-44 (Units 3.16 and 3.17) were formerly located beneath this area. Currently, Units 3.36 (empty used drums, in foreground) and Units 3.15, 3.26, and 3.32 (far end of picture) are in this area. Note cracks in concrete

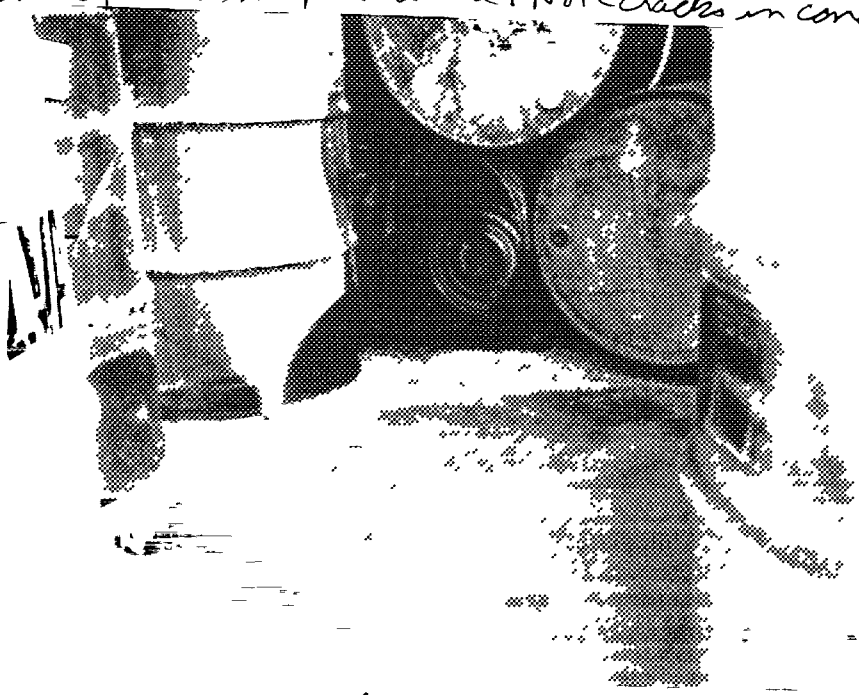
DATE: 6-29-88

TIME 4^50 AM (PM)

DIRECTION:
facing east

WEATHER: clear, warm, sunny

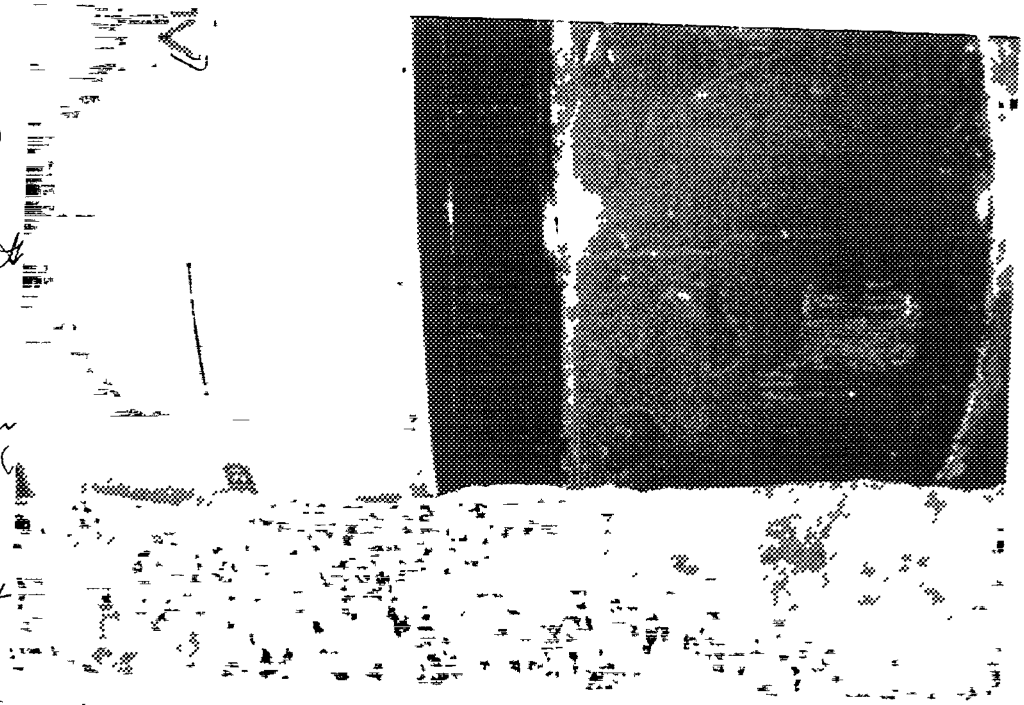
PHOTOGRAPHED BY:
Sandra Szabra



DESCRIPTION:
Empty Used Drum Storage area (Unit 3.36). Open empty drum and drippage onto vermiculite beneath

d/guide/bt (e.g. spill onto concrete paving).

FIELD PHOTOGRAPHY LOG SHEET



DATE: 6-29-88

TIME: 4^50 AM (PM)

DIRECTION:

Facing down (South)

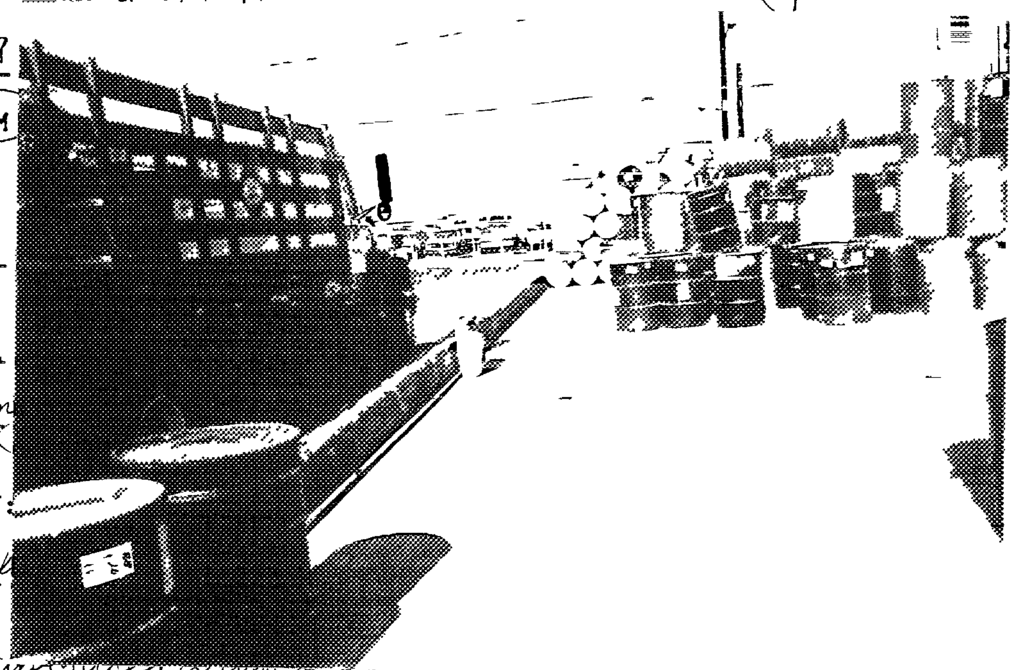
WEATHER: Clear

warm sunny

PHOTOGRAPHED BY:

Sandra Szabat

DESCRIPTION: View of drum pumping area sump (Unit 3.31) from in between empty used drums at east end of current drum pumping area
FIT's PID reading of 10 ppm was in this area



DATE: 6-29-88

TIME 4^52 AM (PM)

DIRECTION:

Facing East

WEATHER: Clear

warm sunny

PHOTOGRAPHED BY:

Sandra L Szab

DESCRIPTION: ~~Empty used drums ... of picture.~~ Current drum pumping area (3.15) in foreground. Pipe that leads from drum pumping area sump (3.31) lies along inside of containment berm. Note cracks in concrete in foreground. Empty Used Drum Storage Area (3.20) at far end of picture

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6 29 88

TIME: 454 AM (PM)

DIRECTION:
Facing southwest

WEATHER: clear, warm
sunny

PHOTOGRAPHED BY:
Sandra Szabat

DESCRIPTION: AGT 42, part of unit 320.
Stains on tank below sample Ports Stains
~~grease~~ solvent residue.

DATE: 6-29-88

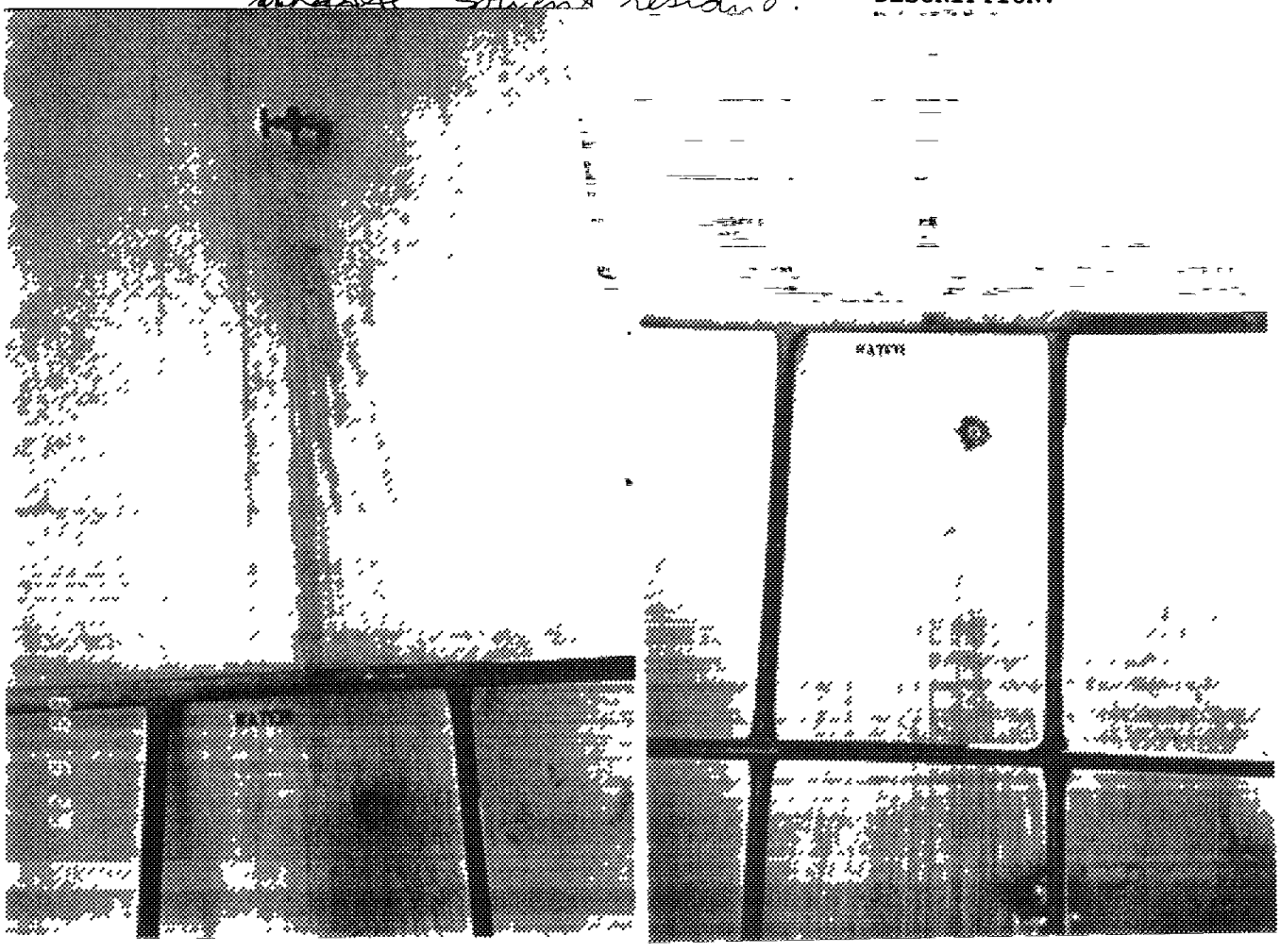
TIME 454 AM (PM)

DIRECTION:
Facing southwest

WEATHER: clear
warm, sunny

PHOTOGRAPHED BY:
Sandra Szabat

DESCRIPTION:



FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29 88

TIME: 457 AM (PM)

DIRECTION:
Facing east

WEATHER: Clear,
warm, sunny

PHOTOGRAPHED BY:
Sandra Szabat

DESCRIPTION: Low spot in bermed area around AGTs 33-42 (Unit 3.20), East end. Note stains on concrete block wall also cracks in concrete (in shadow foreground).

DATE: 6-29 88

TIME 457 AM (PM)

DIRECTION:
Facing east

WEATHER: Clear,
warm, sunny

PHOTOGRAPHED BY:
Sandra Szabat

DESCRIPTION: Low spot in bermed area around AGTs 33-42 (Unit 3.20), East of AGT 42. Note stains on concrete pad and concrete block wall

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-21-88

TIME: 5:00 AM (PM)

DIRECTION:

Facing southwest

WEATHER: Clear

warm, sunny

PHOTOGRAPHED BY:

Sandra Azbert

DESCRIPTION: ACT 41 sample port (part of Unit 3.20), storage tank for waste TF. Note stains on side of tank.

DATE: _____

TIME ___ AM PM

DIRECTION:

_____

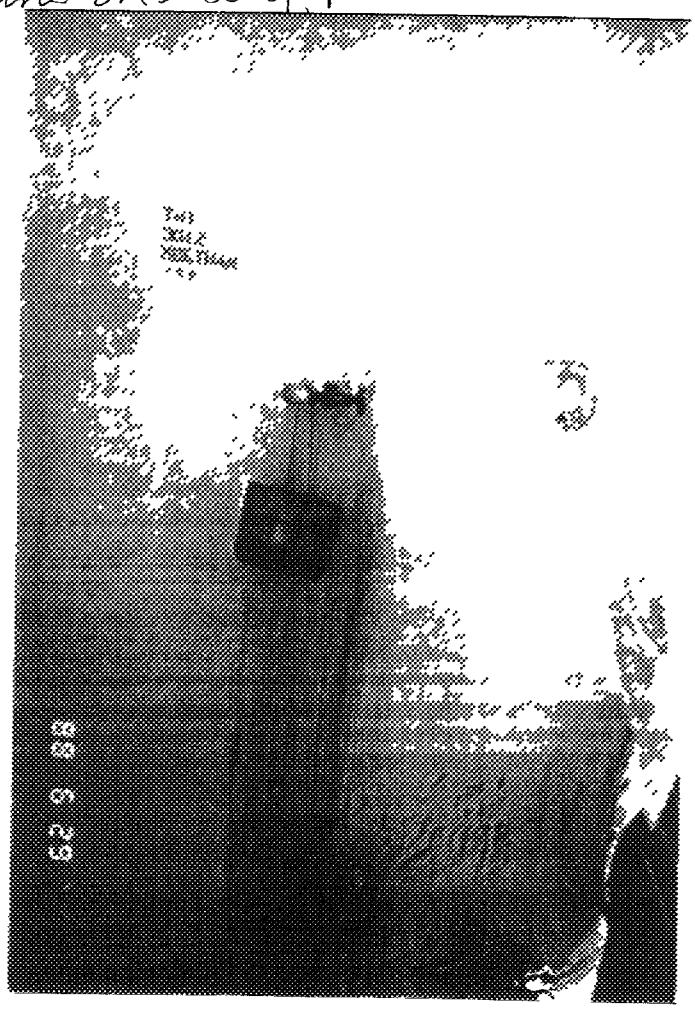
WEATHER: _____

_____

PHOTOGRAPHED BY:

_____

DESCRIPTION:



FIELD PHOTOGRAPHY LOG SHEET

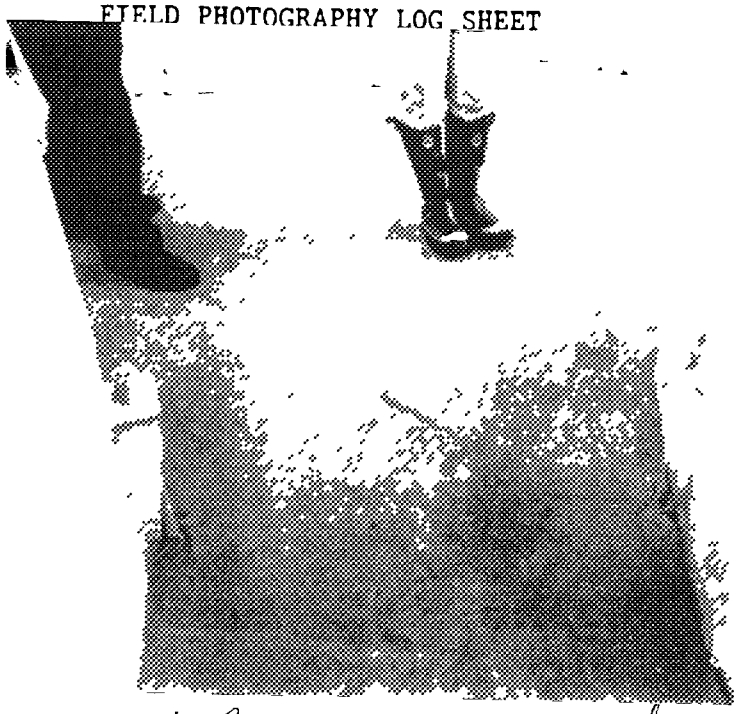
DATE: 6-29-88

TIME: 500 AM (PM)

DIRECTION:
Facing southward down

WEATHER: clear, warm sunny

PHOTOGRAPHED BY:
Sandra Szabat



DESCRIPTION: Concrete Pad between AGTs 40 and 41 in Unit 320. Note cracks and stains in and on the concrete pad.

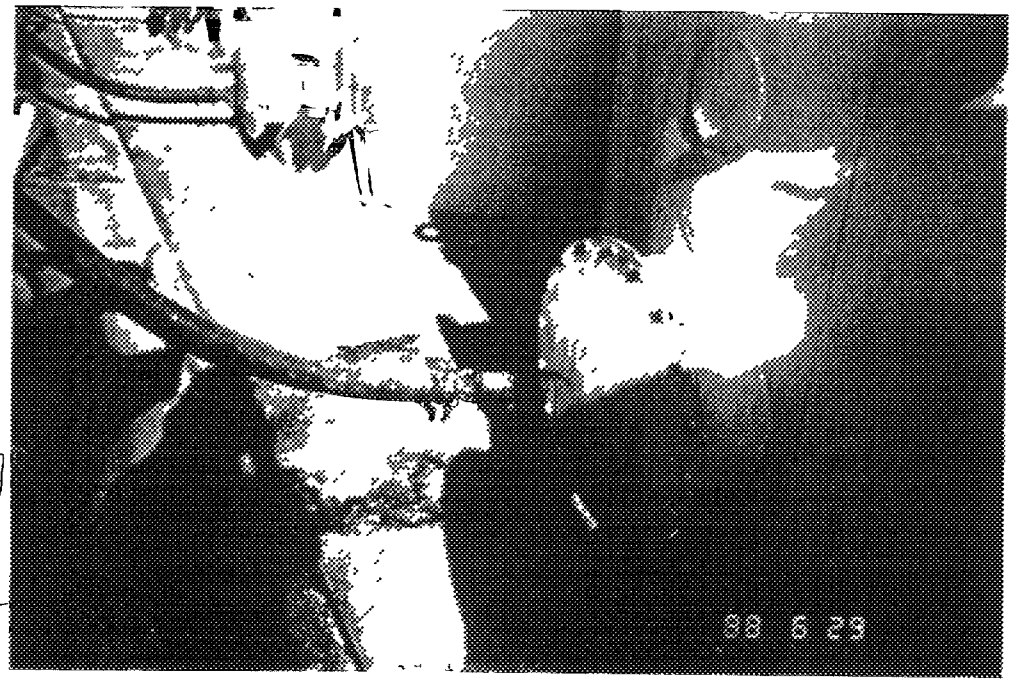
DATE: 6-29-88

TIME 503 AM (PM)

DIRECTION:
Facing East

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szabat



DESCRIPTION: Inlet to AGT 39, Part of Unit 320. Note stains on concrete pad below tank. AGT 39 current stores mixed chlorinated waste solvent

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

TIME: 5^03 AM (PM)

DIRECTION: Facing Southeast

WEATHER: clear, warm, Spring

PHOTOGRAPHED BY: Sandra Szabo

DESCRIPTION: AGT 34, Part of Unit 3.20, used as mixing tank to blend flammable waste solvent for cement kiln fuel. Note stains on tank and vermiculite in concrete pad.

DATE: _____

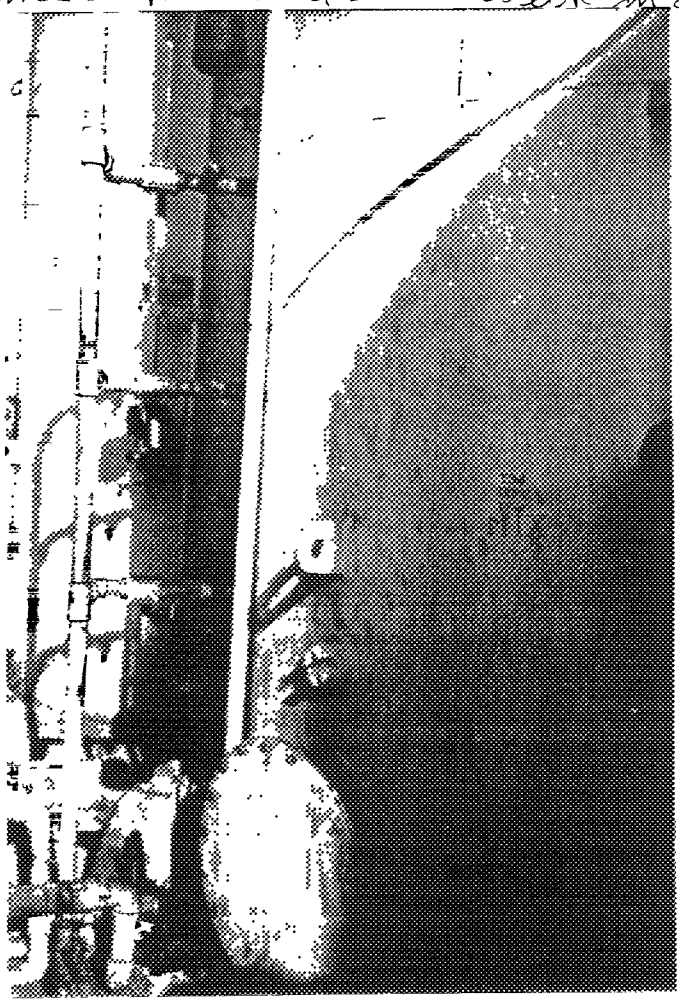
TIME ___ AM PM

DIRECTION: _____

WEATHER: _____

PHOTOGRAPHED BY: _____

DESCRIPTION:



FIELD PHOTOGRAPHY LOG SHEET

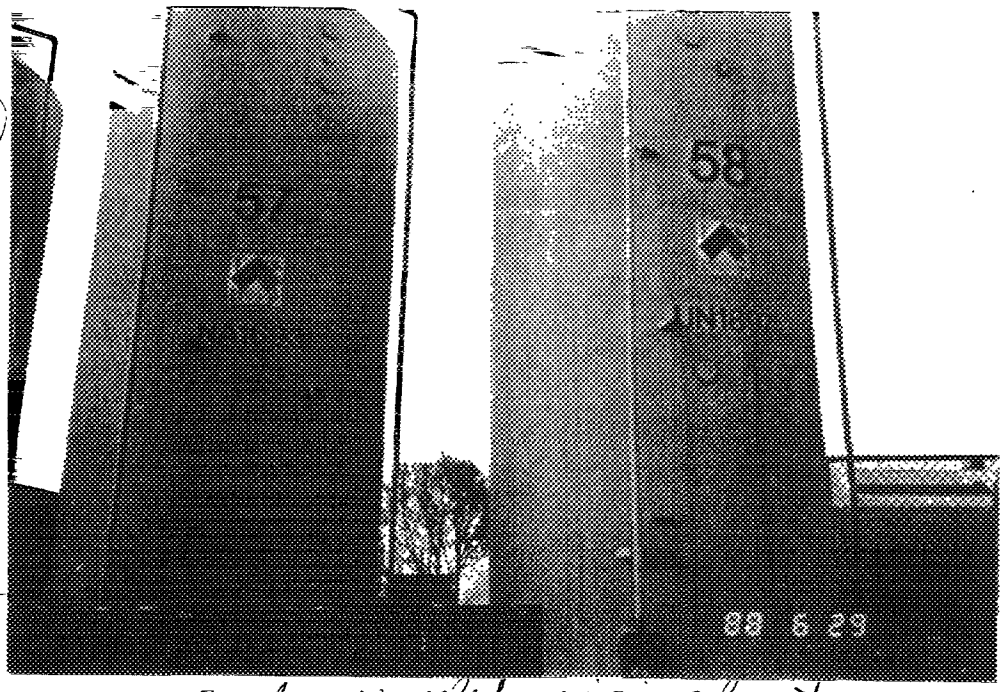
DATE: 6-29-88

TIME: 5:37 AM (PM)

DIRECTION:
facing north

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szalay



DESCRIPTION: AGTs 57 & 58, for recycled & virgin solvents. Located in bermed "northwest tank farm" ~~area~~ which has a sump that has been designated as an area of concern. Note stains on sides of tank.

DATE: 6-29-88

TIME 5:07 AM (PM)

DIRECTION:
facing north

WEATHER: clear warm sunny

PHOTOGRAPHED BY:
Sandra Szalay

DESCRIPTION: AGTs 55-57, for virgin and recycled solvents. Located in bermed "northwest tank farm," which has a sump that has been designated as an area of concern. Note stains on sides of tank.

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

TIME: 5^10 AM (PM)

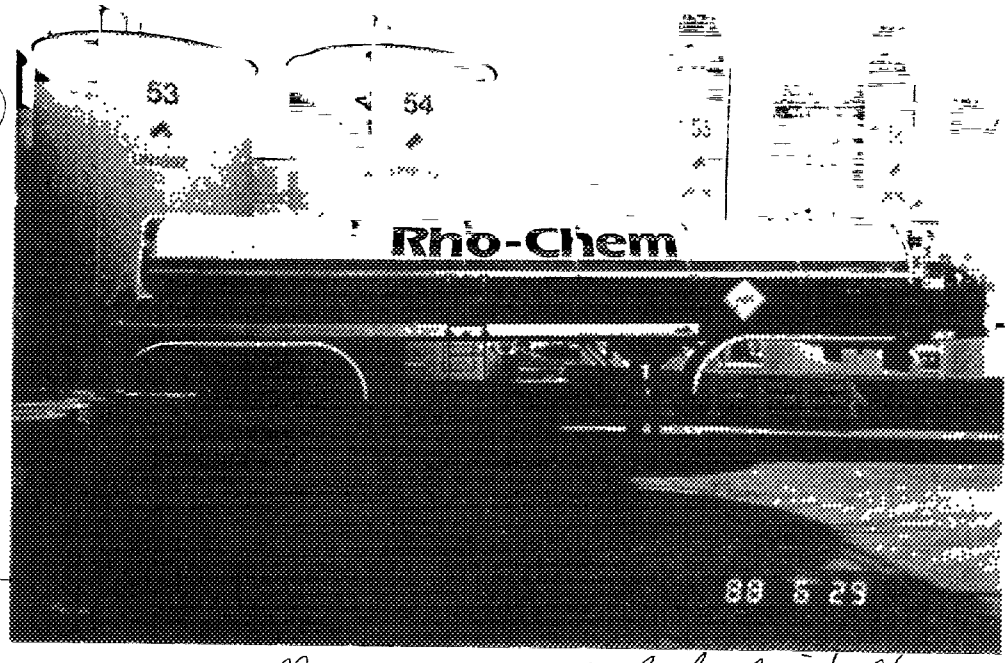
DIRECTION:

Facing North

WEATHER: Clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Azabrat



DESCRIPTION: Rho-Chem's 3500-gallon vacuum truck for hauling back loads of hazardous waste solvents. Parked just south of the ~~northwest~~ tank farm after its rinsed out. Also AGT's 53-56 used for virgin & recycled solvent storage. Note cracks in concrete in rear yard and drums on concrete near trucks.

DATE: 6-29-88

TIME 5^10 AM (PM)

DIRECTION:

Facing northwest

WEATHER: Clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Azabrat

DESCRIPTION: ~~AGT~~

AGT's 50-54 in northwest tank farm for virgin & recycled solvent storage. Also Rho-Chem's 3500-gallon vacuum truck. Note cracks in concrete in rear yard

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

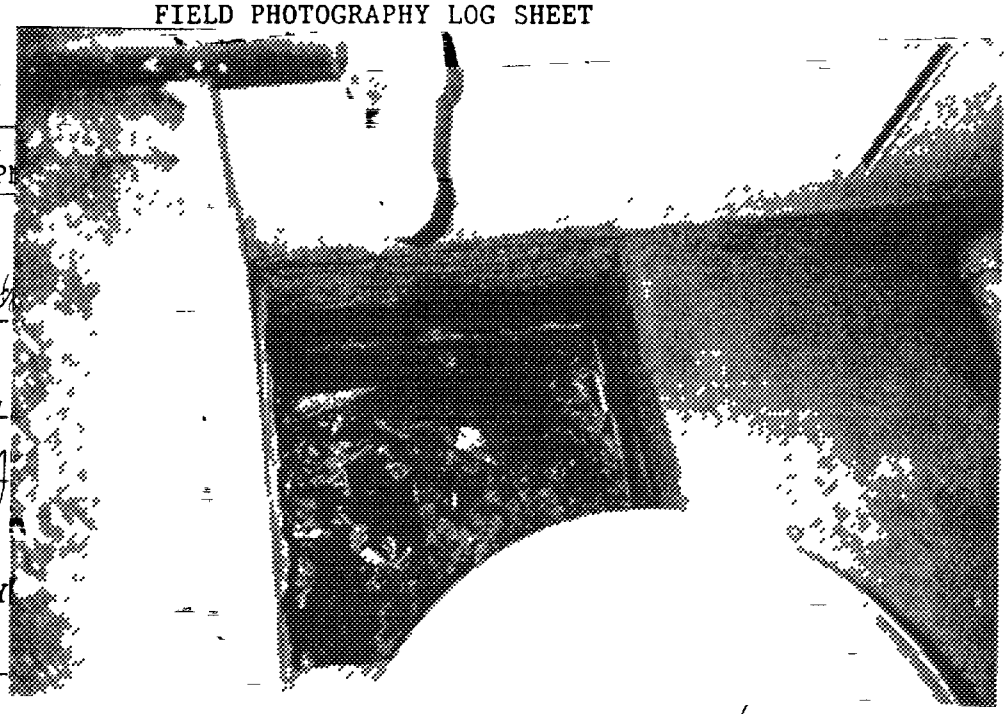
DATE: 6-29 88

TIME: 512 AM PM

DIRECTION:
facing south and b

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sonka Szalat



DESCRIPTION: Sump in northwest tank farm berm area, an "area of concern". Note debris and dark stains in sump.

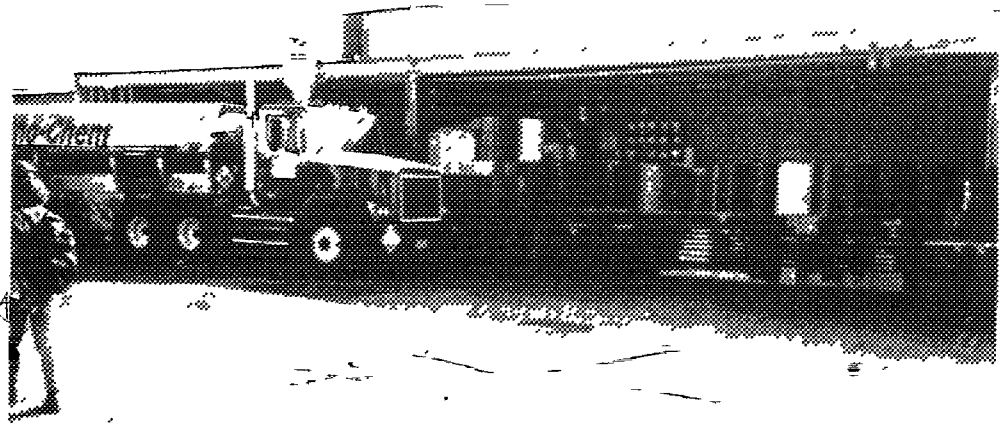
DATE: 6-29-88

TIME 510 AM PM

DIRECTION:
facing southwest

WEATHER: clear, warm, sunny.

PHOTOGRAPHED BY:
Sonka Szalat



DESCRIPTION: Former Residual Solvent Disposal Area (Unit 32) was (approximately) located in the center of this photo. USTs 1-28 ~~are beneath this area just. Note~~ numerous cracks in concrete and drums stored in the fore...

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

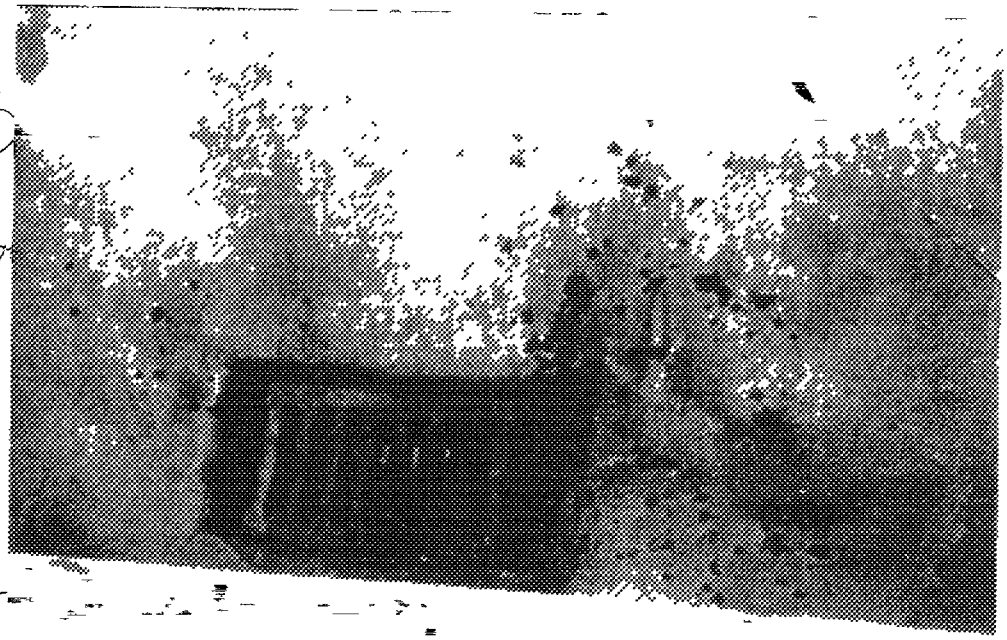
DATE: 6 29 88

TIME: 5^15 AM (PM)

DIRECTION: facing eastand do down

WEATHER: Clear, warm, sunny

PHOTOGRAPHED BY: Linda Azbrat



DESCRIPTION: Sump in vicinity of AGTs 60-65. FIT detected solvent odor here and PID reading of 1 PPM. This was an "area of concern."

DATE: _____

TIME ___ AM PM

DIRECTION:

_____

WEATHER: _____

_____

PHOTOGRAPHED BY:

_____

DESCRIPTION:

_____

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

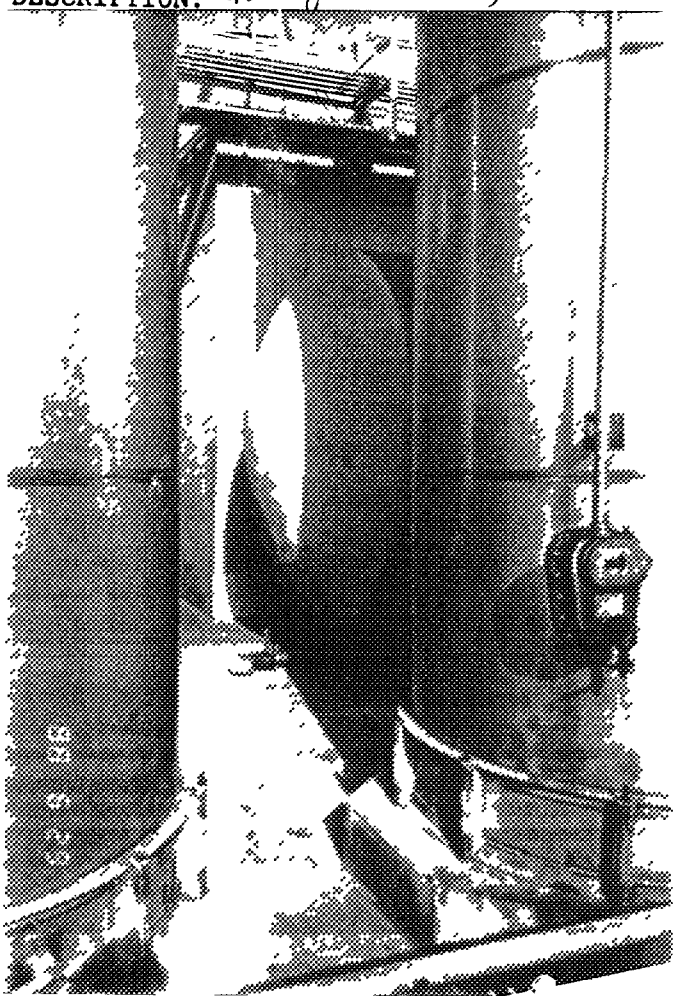
TIME: 5:17 AM (PM)

DIRECTION:
Facing southeast

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szalad

DESCRIPTION: Inlet/outlet end of AGT68, Heat exchanger (Part of Unit 3.24)



DATE: 6-29-88

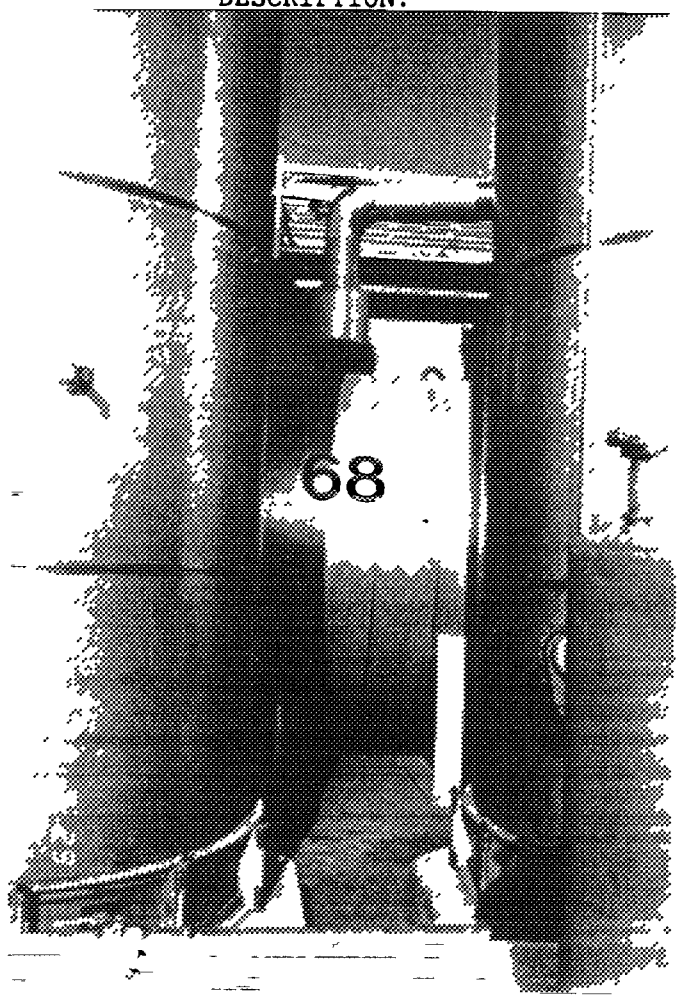
TIME 5:17 AM (PM)

DIRECTION:
Facing East

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:
Sandra Szalad

DESCRIPTION: AGT68, reboiler, Part of Unit 3.24.



FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29 88

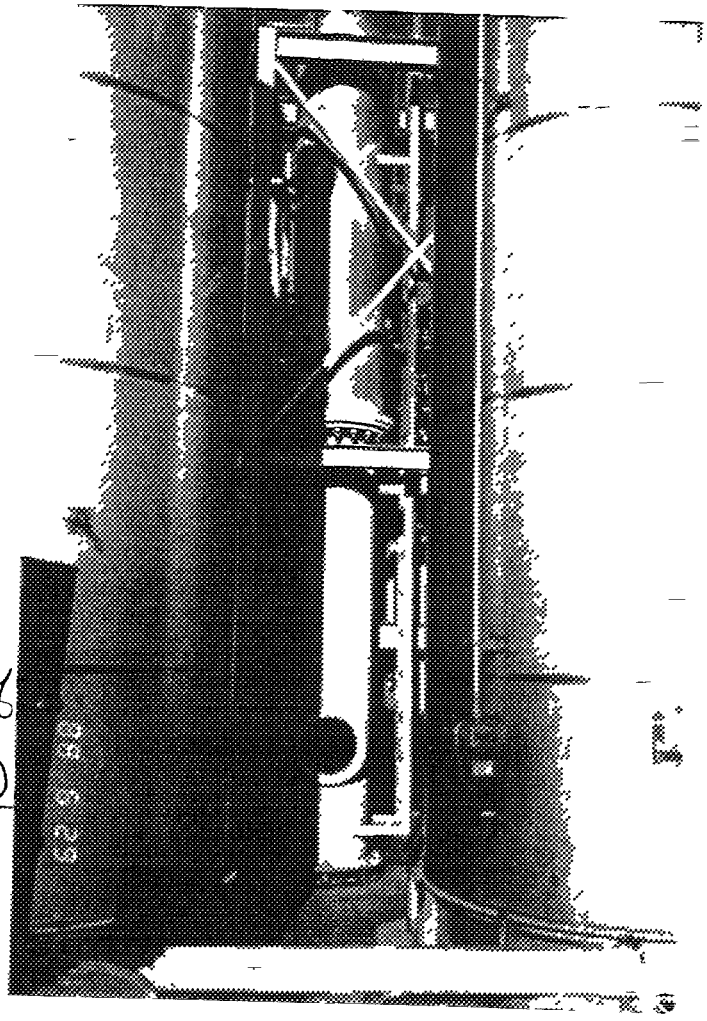
TIME: 5^20 AM (PM)

DIRECTION:
Facing East

WEATHER: Clear,
warm, sunny

PHOTOGRAPHED BY:
Sandra Szalat

DESCRIPTION: Bottom portion of Fractionation
Column (part of Unit 324)



DATE: _____

TIME ___ AM PM

DIRECTION:

_____

WEATHER: _____

_____

PHOTOGRAPHED BY:

_____

DESCRIPTION:

_____

d/guide/bt

FIELD PHOTOGRAPHY LOG SHEET

DATE: 6-29-88

TIME: 520 ___ AM (PM)

DIRECTION:

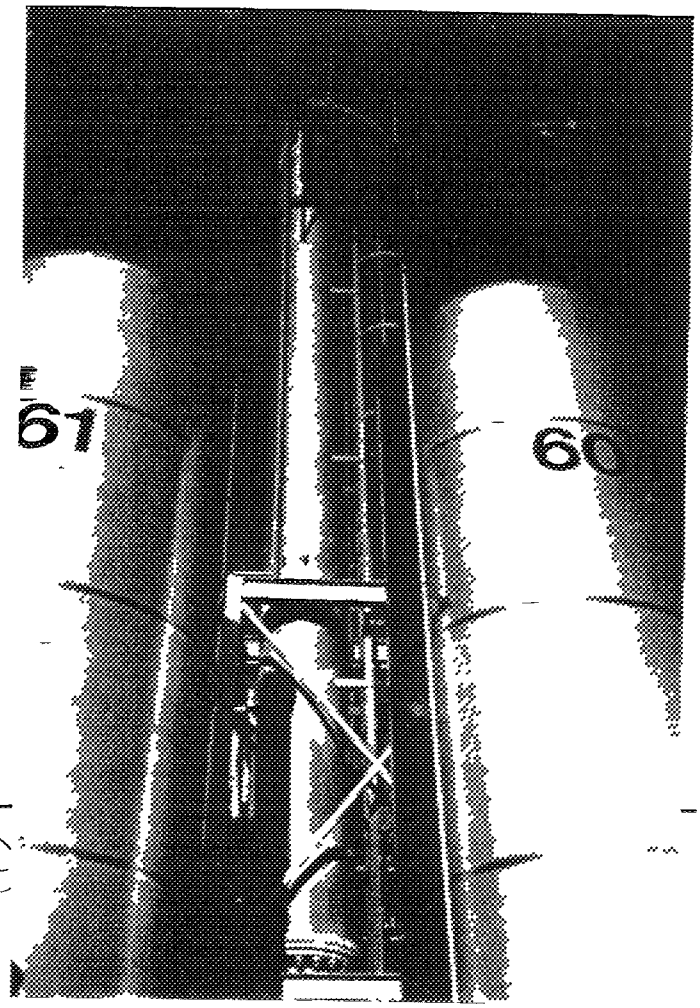
Facing east

WEATHER: clear, warm, sunny

PHOTOGRAPHED BY:

Sandra Azabat

DESCRIPTION: Top Portion of Fractionation column (part of Unit 3.24), AGT 61 (Unit 3.33) and AGT 60 (recycled water storage tank)



DATE: _____

TIME ___ AM PM

DIRECTION:

_____

WEATHER: _____

_____

PHOTOGRAPHED BY:

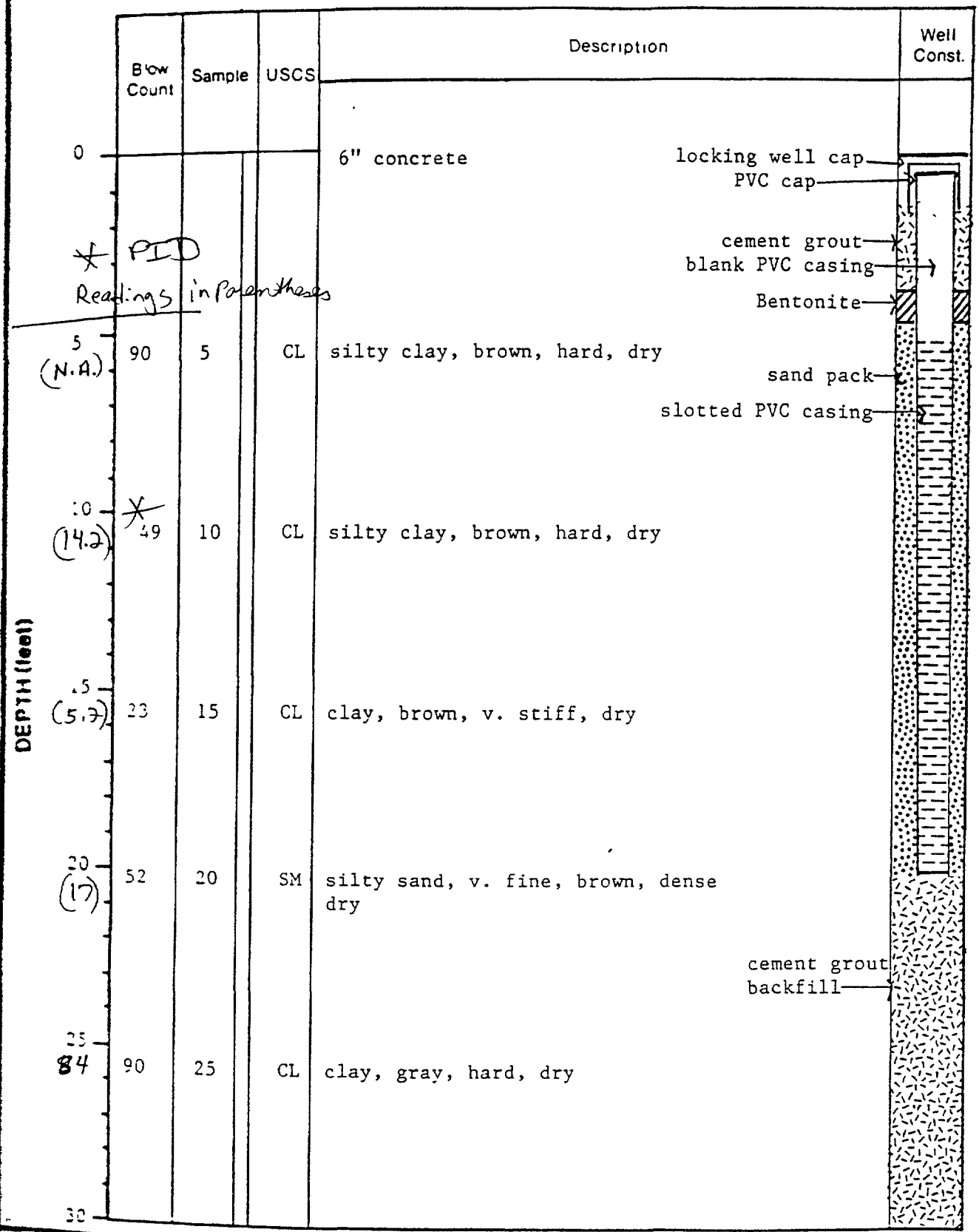
_____

DESCRIPTION:

_____

d/guide/bt

APPENDIX E
1985 Boring Logs and Photoionization Detector Readings



IH KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS & MATERIALS TESTING

PREPARED BY: JF DATE: 4/85

CHECKED BY: DATE:

Rho-Chem
Inglewood, Ca.

LOG of BORING 1

PROJECT NO. Q-1005-2

PLATE

A-1

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
30	70 (17) *	30	CL	clay, gray, hard, dry PID Readings in Parenthesis	cement grout backfill
35	76/5" (N.H)	35	CL	clay, gray, hard, dry	
40	90/5" (106/283)	40	CL	clay, gray hard, dry	
	99/5" (201)	43	CL	clay, gray, hard, dry TD=43', dry	
50					

T.M. KLEINFELDER & ASSOCIATES
CHEMICAL CONSULTANTS • MATERIALS TESTING

PREPARED BY: JF DATE: 4/85

CHECKED BY: DATE:

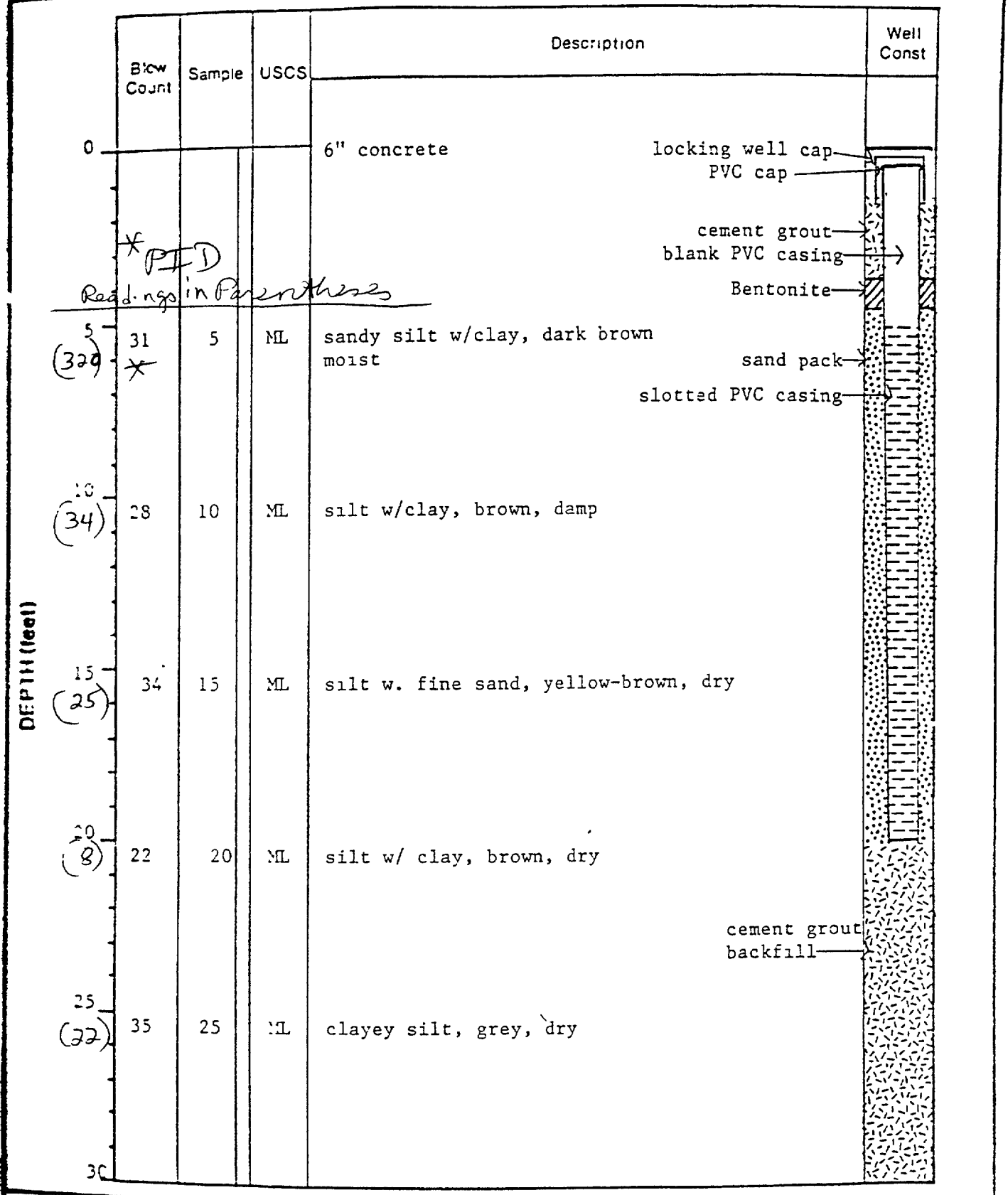
Rho-Chemical
Inglewood

LOG of BORING 1

PROJECT NO. 0-1005-2

PLATE

A-1



J.H KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

PREPARED BY: JF DATE 4/85

CHECKED BY: DATE

Rho-Chem
Inglewood, Ca.

LOG of BORING 2

PROJECT NO. Q-1005-2

PLATE

A-2

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
				PID Readings in Parenthesis	
30 (32)	34 X	30	CL	silty clay, brown, dry	
				cement grout backfill →	
35 (30)	62	35	CL	silty clay, grey, dry	
40 (10)	49	40	CL	clay, grey, dry	
45 (65)	36	45	CL	clay, grey, dry	
50 (30)	22	50	CL	clay, grey, dry	

J.H KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

Rho-Chem
Inglewood, Ca.

LOG of BORING 2

PLATE
A-2

PREPARED BY: J.F. DATE: 4/85
CHECKED BY: DATE:

PROJECT NO. 0-1005-2

Blow Count	Sample	USCS	Description	Well Const.
0			6" concrete	locking well cap PVC cap
			*PID Readings in Parenthesis	cement grout blank PVC casing Bentonite
5 (745) *	5	ML	clayey silt, dark brown, damp	sand pack slotted PVC casing
10 (835) 27	10	ML	clayey silt, dark brown, damp	
15 (825) 25	15	ML	silt, w/clay, yellow-brown, damp	
20 (950) 27	20	ML	silt w/clay, yellow-brown, damp	cement grout backfill
25 (940) 37	25	ML	clayey silt, yellow-brown, grey	
30				

DEPTH (feet)

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

Rho-Chem
Inglewood, Ca.

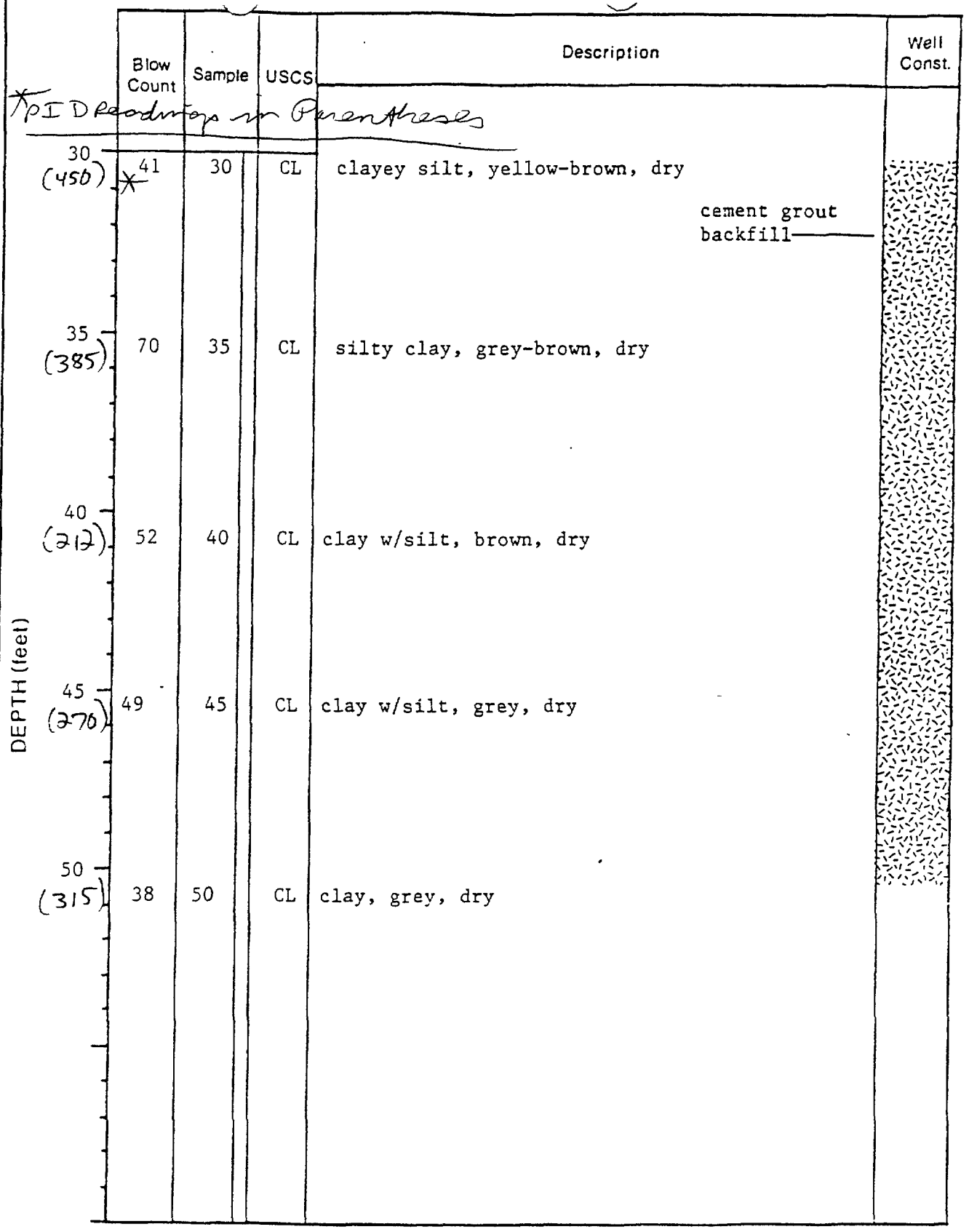
LOG of BORING 3

PLATE
A-3

PREPARED BY: JF DATE: 4/85

CHECKED BY: DATE

PROJECT NO. Q-1005-2



J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

PREPARED BY: JF DATE: 4/85

CHECKED BY: DATE:

Rho-Chem
Inglewood, Ca.

LOG of BORING 3

PROJECT NO. Q-1005-2

PLATE
A-3

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const.
	* PID Readings in Parenthesis				
30 (450)	*41	30	CL	clayey silt, yellow-brown, dry	cement grout backfill
35 (385)	70	35	CL	silty clay, grey-brown, dry	
40 (212)	52	40	CL	clay w/silt, brown, dry	
45 (270)	49	45	CL	clay w/silt, grey, dry	
50 (315)	38	50	CL	clay, grey, dry	

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

PREPARED BY: JF DATE: 4/85

CHECKED BY: DATE:

Rho-Chem
Inglewood, Ca.

LOG of BORING 3

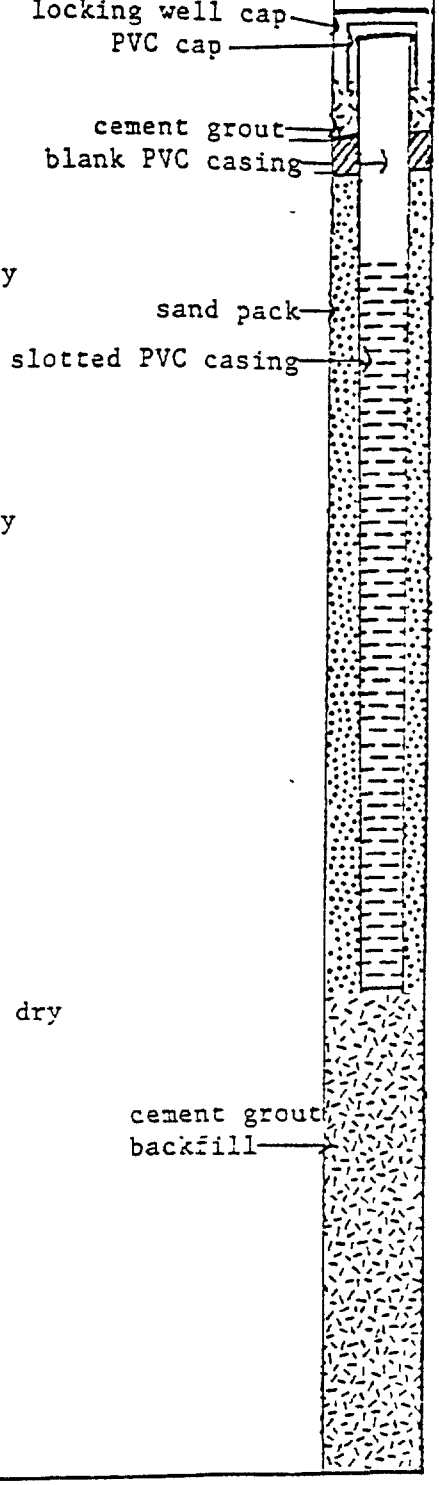
PROJECT NO. Q-1005-2

PLATE

A-3

Depth (feet)	Blow Count	Sample	USCS	Description
0				6" concrete
				~~ppm~~ D
				Readings in parenthesis
5	~~56~~	5	ML	clayey silt, gold-brown, dry
(0)				
10	36	10	ML	clayey silt, gold-brown, dry
(28)				
15	39	15	ML	silt with a fine sand, dry
(27)				
20	39	20	ML	silt with fine sand, gold, dry
(105)				
25	35	25	ML	clayey silt, brown, dry
(68)				
30				

Well Const



J H KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

Rho-Chem
Inglewood, Ca.

LOG of BORING 4

PLATE
A-4

PREPARED BY: JF DATE 4/85
CHECKED BY: DATE
PROJECT NO. Q-1005-2

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
				*PID readings in Parentheses	
30 (130)*	32	30	ML	clayey silt, brown, dry	cement grout backfill →
35 (243)	47	35	CL	grey silty, clay, dry	
40 (244)	43	40	CL	silty clay, tan-grey, dry	
45 (97)	43	45	CL	silty clay, tan-grey, grey	
50 (208)	40	50	CL	clay, tan-grey, dry	

J.H KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

Rho-Chem

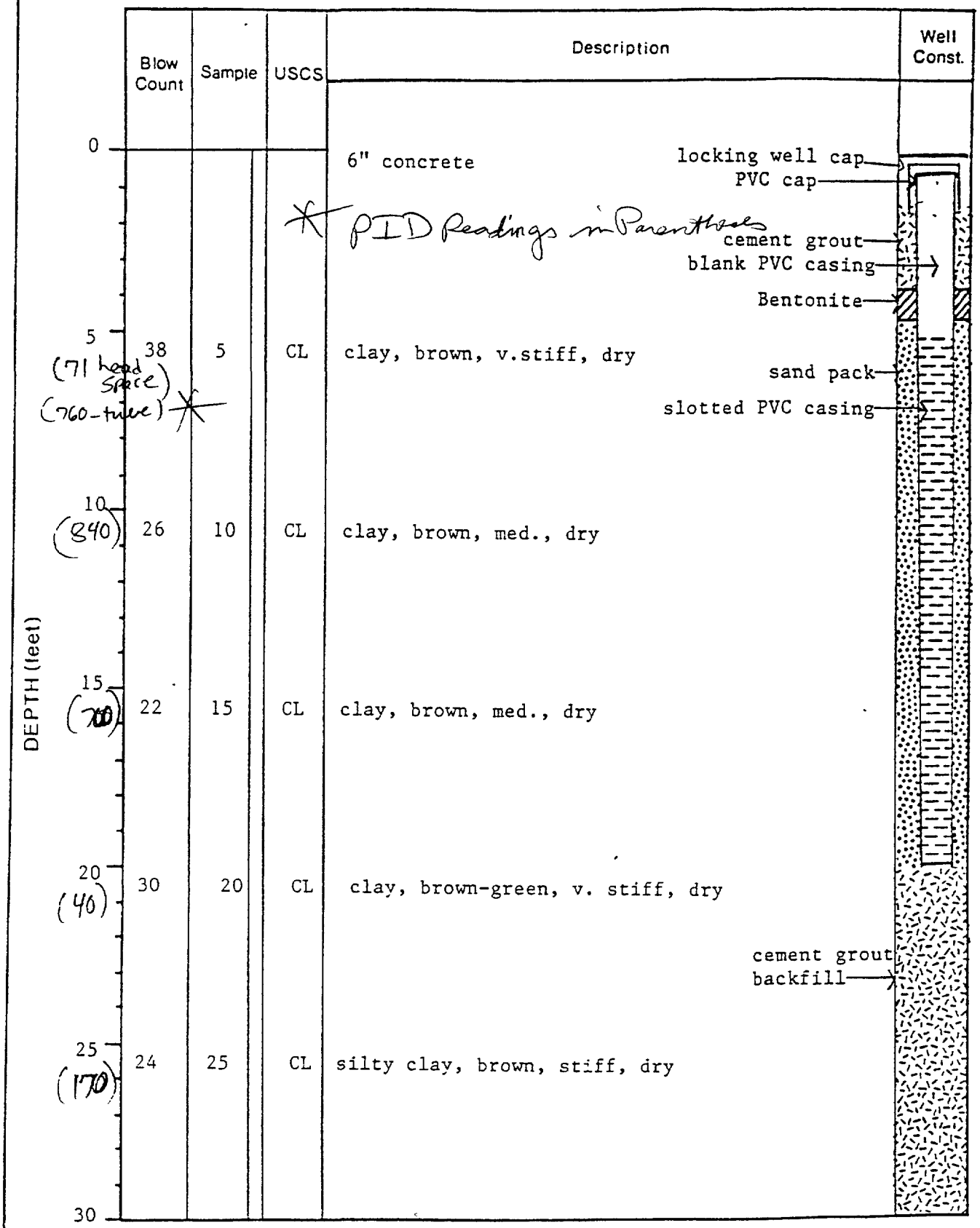
LOG of BORING 4

PLATE A-4

PREPARED BY: JF DATE: 4/85

CHECKED BY: DATE:

PROJECT NO. 0-1005-2



J H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

Rho-Chem
Inglewood, Ca.

LOG of BORING 5

PLATE
A-5

PREPARED BY: JF DATE: 4/85

CHECKED BY: DATE:

PROJECT NO. Q-1005-2

DEPTH (feet)	Blow Count	Sample	USCS	Description	Well Const
30 (256)	23 *	30	CL	silty clay, brown, v.stiff, dry * PID Readings in Parenthesis	cement grout backfill
35 (140)	46	35	CL	clay, gray, hard, dry	
40 (81)	36	40	CL	clay, grey, v.stiff, dry	
45 (40)	42	45	CL	clay, green-gray, hard, dry	
50 (50)	32	50	CL	clay, green, v. stiff, dry TD=50', dry	

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS & MATERIALS TESTING

PREPARED BY: JF DATE: 4/85

CHECKED BY: DATE:

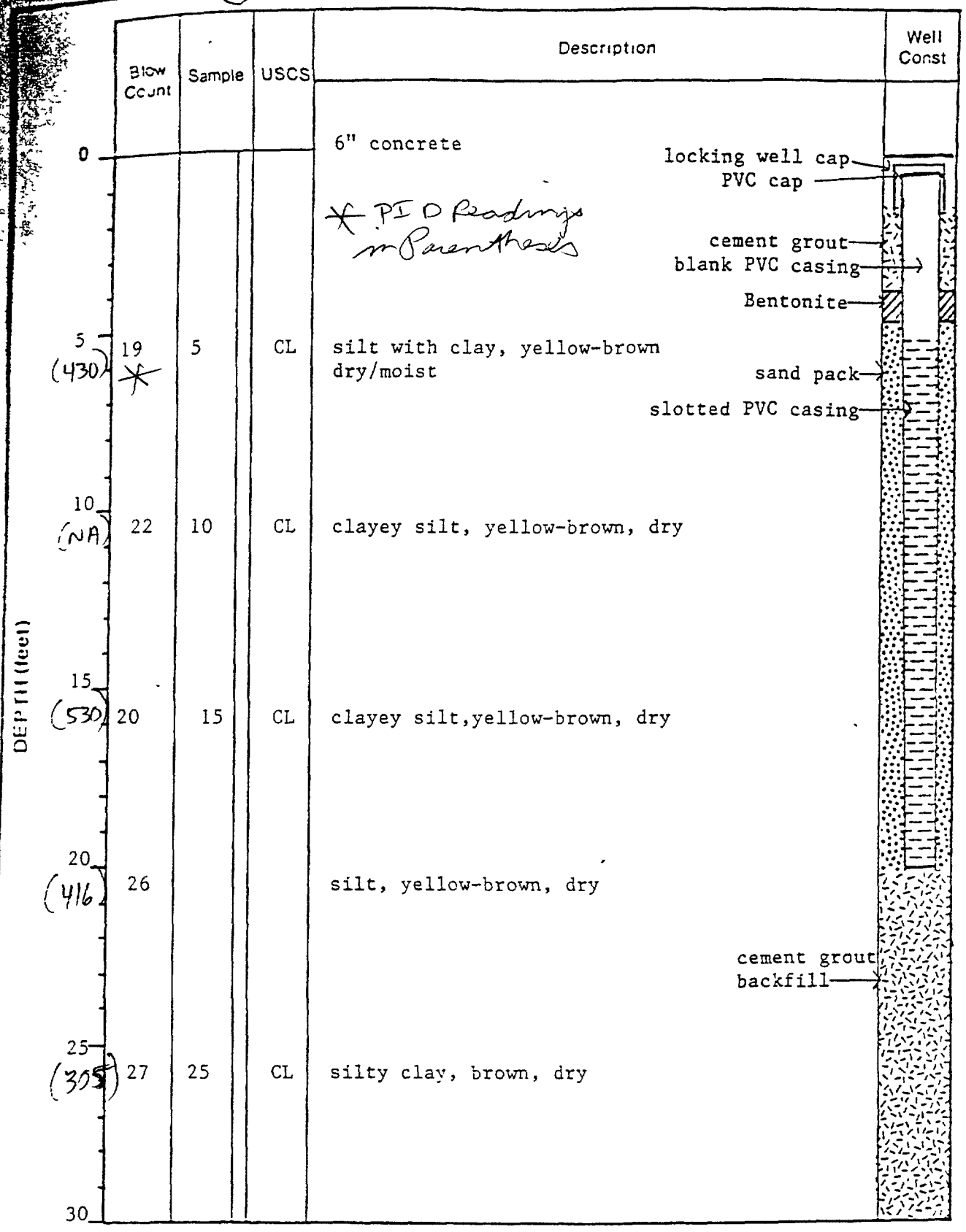
Rho-Chem
Inglewood, Ca.

LOG of BORING 5

PROJECT NO. 0-1005-2

PLATE

A-5



J H KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

Rho-Chem
Inglewood, Ca.

LOG of BORING 6

PLATE
A-6

PREPARED BY: JF DATE: 4/85

CHECKED BY: DATE:

PROJECT NO. Q-1005-2

Blow Counts	Sample	USCS	Description	Well Const.
30	30	CL	silty clay, green-brown, dry	
			cement grout backfill →	
			* PID Readings in Parenthesis	
(330) *				
48	35	CL	silty clay, grey, dry	
(525)				
40 44	40	CL	clay, yellow-brown, dry	
(465)				
45	45	CL	clay, grey	
(190)				
50	50	CL	clay, grey	

H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

PREPARED BY: JF DATE: 4/85
CHECKED BY: DATE:

Rho-Chem
Inglewood, CA.

LOG of BORING 6

PROJECT NO. 0-1005-2

PLATE
A-6

Blow Count	Sample	USCS	Description	Well Const
39 (430)	30	CL	silty clay, green-brown, dry	cement grout backfill →
			* PID Readings in Parentheses	
(330)				
48	35	CL	silty clay, grey, dry	
(575)				
44	40	CL	clay, yellow-brown, dry	
45 (465)	45	CL	clay, grey	
50 (190)	50	CL	clay, grey	

DEPTH (ft)

J.H. KLEINFELDER & ASSOCIATES
GEOTECHNICAL CONSULTANTS • MATERIALS TESTING

PREPARED BY: JF DATE 4/85

CHECKED BY: DATE

Rho-Chem
Inglewood, CA.

LOG of BORING 6

PROJECT NO 0-1005-2

PLATE

A-6

APPENDIX F
VSI Field Notes

6/29/88 JUNE 29, 1988

RHO-CHEM Visual Site Inspection. Inglewood California. 425 Isis Avenue

On site: 9:05 AM

Present: Chris Lichens (E+E)
Sandra Szelat (E+E)
Mary Hourigan (E+E)
Julia Diridoni (ICF)
Jim Levy (EPA)

EQUIPMENT: mini rad
Camera
HNu

Interview: 9:20 AM inside Office w/Ernie Roehl ~~Owner~~ of Rho-Chem. Mr Roehl is president
Permit expires 12/88: updated
Operations Plan. Ken ~~Chaing~~ (DOHS) Chiang is dealing with Permit update

Klemfelder studies indicate that soil contamination due to spillage of substances:

Company will be sold to multinational Corp: Grow-Group. ~~RGG~~ Sales of Rho-Chem finalized next month

Solvent recycling + distribution

Julia Diridoni

6/21/00

Grow Group will build tank farm in Long Beach.

Current tanks on site hold Virgin Solvents

When tank farm constructed solvent recycling will occur in Long Beach and the current USTs will be excavated.

Jim Levy - explained background of RCRA/CERCLA RFA investigation to Ernie Rochl.

CEO of Corporation Bonnie O'Meara

Mr. Rochl is explaining background of investigation of facility

All RCRA facilities will have an RFA performed on them within region IX

Mr. Rochl and Ms O'Meara own the business. Ms. O'Meara owns the property.

6/20/88

Mark Sandoval - Environmental Manager of Rho-Chem

Chet Early (sp?) - has been around with Rho Chem since approx. 1958

Ken Chiang arrived. All in conference room

9:30 AM All informational persons present. Sandy began questions on history of Rho Chem. Questions are directed to Chet Early.

Company began 1951. Prior use of adjacent properties - residences NO prior chemical industries

Originally - distributor of cutting oils & solvent recycling began approx 1964. Oils & lubricants distribution ceased in 1972.

1964 - Steam boiler permit found - indicative of solvent recycling beginning.

6/29/86 Ownership History

1951 American Better Chemicals (ABC)
Abco Industries - owned by O'Meara

1974 Rho Chem Corporation formed from ABC + Abco Industries

1961-1969 - TF was used on site

1964 - Artisan Still after degreaser Still (Delta style)

1967 - Northern most portion of lot leased.

(originally residential areas)

1962 - mid-section + tanks installed -

1951 - Southern most and original parcel owned by Mrs. O'Meara.

Early
Dec/1959 Mr. Beall started

1st drum pumping area was Concrete
drum → pumped to tanks
Above ground tanks
→ 500 - 1600 gallon tanks
2000 gallon tank

#39, #40 on

6/23/88

Chlorinated solvents at the time

Roofed shed; concrete pad - no walls. (tank area)

flat topography; piping in the area

~~#34-36~~

~~Tanks descriptions + contents~~

#34 area. Still site locations.

(Genesol = Freon)

G designation on Air Board permits

Drier (molecular sieve) then transported to still.

T_{35} (1st cut) then directed to G_5 G_6 and sold.

TF Still bottoms 1,1,1 was recycled. (1,1,1) ~~t,1,1~~

run thru chlorinated solvents.

TF was essentially final rinse

Solvent source from Litton (sp?)

T_{27} - still bottoms + water

T/T 1100

T_{37} - still bottoms fed into steam injector w/ collection tank beneath still

T_{36} ~~Artisan~~ feed tank to Artisan Still (T_{37})

~ 1967 T_{45}, T_{46} were T_{39}, T_{40} and used the same way as holding tanks (fig 2)

T_{41} = T_{47} disposed of/destroyed (fig 1)

Fig 2 ~~1960~~ 1967 T_{33} - T_{44} installed

"First Cut" ≡ Waste blend of CFC 113 w/ 1,1,1 ~~TCA~~ TCE boiling off of CFC 113

"Still-bottom" ≡ 1,1,1 TCE

Julian Wilson

4/27/88

Drums evaluated via Specific Gravity (SG) individually. Group similar SG and pump/group into tanks immediately.

Also drums grouped by 1,1,1 or Pill contents.

Distribute "clean" solvents and pick up spent solvents. Recycle & then re distribute. Product used primarily as degreasers.

Artisan Still used just for a few months (?) - Circulating Still - small.

T_{36} was feeder tank for Artisan Still.

1966 - G series (TF) instituted
(?) 2 300 gal tank - 1 6" glass column x 10'
1000 gal each 3 6" glass columns, 36'

G_2, G_3 process tanks/holding/feed tanks for G_4

G_5 - ?

Julie Wilson

6/29/88

Prior to distribution, reclaimed product was filtered. Pumped into 55-gallon drum + 5-gallon containers.

T34 Wash } revised ≈ 1968 - 1969
T35 Low Boiler }

(Fig 2) Section A-5 waste TF was stored in drums. Indoors. Used as storage from ~~1960~~ 1965 - 1967.
[From drums to water wash then drier to unit]

Submersible tank pump TF to wash tank. Pump ~~via~~ had sliding veins (sp?)

Revised ~~1960~~ 1967-1968 (large reboiler ceased ~~1970~~ in 1972 or early 1973

Mr Rodel Car. in to join Rho-Chem in Jan 1972

Julian Indore

6/29/88

Flash Drum Recovery System

- oil bath → flash drum
- late 1960's. Permit issued by APCB
- 1970 operation permit

- Super heated 1,1,1 TCE, ~~heated~~ heated
- by ~~heat~~ oil run thru heaters

- Tube bundle ≡ flash drum

- ~~System~~ Not used after 1972 due to clogging tubes.

- Feeder tank from "still area", T_{36}
- possibly; originating from UST pumped to Feeder, pumped to recovery system.
- Recirculating system.
- Sludge tank may have been T_{27} (Setting tank). Used for 1,1,1 reclamation

- Flash drum system and feeder removed, in (1970 → 1972, usage time frame)
- (reclaimed 1,1,1 pumped to T_{23})

#1 Live steam unit prior to Flash drum system '66 – '70 not Alcothane Still

1968 - 1,1,1 usage began/increased; before ran mostly PCE

Julian Isaacson

4/07/80

No drainage sumps on site

Abcothane Still - 1973 permit issued to operated; Steam heated ~~Degreaser type~~ Used Baron Blakesley Shell

Separate stills

Again Abcothane Still: (electric heater)

1980s - 1,1,1 TCE degreaser introduced by APCD. Electrical heaters didn't work, heaters ~~were~~ were heated up. Modified system → live steam installed (1982)

Electrical heater ≤ 1980 out of service shortly thereafter

Live steam - injection conversion #2 → ~~1980~~ 1981

Mass confusion here with regard to the live steam unit (Name #1 - be careful)

Julian Isdore

6/21/80

Quantities approximately 10,000 gal/yr up till a few years ago.

Steam injection #1 1966-1970
Same area

1973 1 Baron (Blakesley) → 1 delta (1975)
degreasers same configuration.
life expectancy 2 years; would corrode.

1978 - 2 delta ~~units~~ heating ~~coils~~ coils (steam thru coils to heat up solvent)

1981 ~~1982~~ Abcothane Electric Heating converted to ~~steam~~ unit
Steam injection #2
2 Deltas removed/~~cracked~~ ~~operations~~

1982 USTs removed, removal included piping (that lead to Deltas)

Julia Eldard

6/29/86

1981 - 1985 Live steam injection #2 used for chlorinated solvents. Initially no location no berms. Berms were installed in the area in 1982, 1983.

~~Fractionation column~~ Surge column aided in dispersion of "bubbles" when bubbled passed thru a wire packing at the top of the column.

Tar was installed @ the time of steam injection #2

Still bottoms were sold (used oil). Used water was sent to BK'K.

- Land disposal ban 1984, ceased
- steam injector #2. ~~Went to~~
- ~~From~~ Thin film evaporator for
- Chlorinated ~~solvents~~. Both
- installed in 1987. Flammables
- ran thru thin film evaporator

Julie Anderson

6/29/88

Ceased shipment to BKK in ~1982.
Shipped flammables + chlorinated bottoms to Systech. Water was shipped to EPC in Bakersfield (West side EPC)

Flammable not processed now but are capable to do so.

Chlorinated solvents run thru Thin film since 1985 (?)

1981 - 1985 flammables - thin film
1981 - 1985 Chlorinated steam injection #2

1984
~~1985~~ - blending flammable w/ still bottoms? Blended in tank T-32 (Fig 2)

Still bottoms
Flammable
Waste
} separated by GC analysis and specific gravity

- GC analysis run on samples from each drum - wastes accepted in bulk. Used to separate halogenated from flammable materials

Cyclic Ludow

4

6/23/88

1980 ish Fluorinated materials shipped (?) to Romic Chemical (TF)

T43 is now T66 steel bottoms from steam injections
↳ (no longer receives bottoms)

T27 is now T29-31 steel bottoms

1985 TP reclaimed on site; column installed

b/w 1972 - 1985 no distillation of TF (?)
(?) No market

Current usage of tanks
Wastes received in 55 gallon drums
USTs removed in 1982 (2nd)
#33-42 installed 1982 (1st)
bermed area also 1982

8000 gallon above ground tanks

Julian Wilson

6/29/88

1983 - Rho Chem began bringing in hazardous material

T_{34} stored recycled flammable from their film evaporator.
All other tanks in that area used to store waste solvents

In 1985 T_{34} was used to store waste solvents instead of recycled flammable material

2000 - +1200-gallon AST used to blend solvents. Blends of virgin solvents

Mixing "Pit" - mixing of dry, powdered cement like substances. Cement lined pit Area has been backfilled since ~ 1982. Was idle prior to backfilling - operation ceased prior to 1972

$T_{29, 38, 40}$ piped in T_{34} - all above ground piping + storage -

Julia Hudson

6/29/88

T67 - one tank, 4 compartments -- Hexane used to break down cuts from various fractionators

Hexane source Tank

Each compartment held different "cuts"

No longer hexane treatment Tank is used to store cuts

Fractionation use sometimes

1984-1986 - Ribbon mixed, used to mix heavy sludges w/ absorbant and then disposed of at a landfill (?)

Nov 6, 1986 - ribbon blender/mixer operation ceased.

Viscous heavy material vermiculite absorbant shipped to Chemalia; stored for up to 30 days.

Julian Endow

6/29/88

loose covered equipment (blender)
approx 3 x 4 x 7
(H x W x L

Dump drum into elevated mixing devices, blend vermiculite then open bottom of mixer to empty into drums to transport to Casmalia

Lab reconstructed ≈ 1968. ~~Lab was~~

GC material began ≈ 1980 in reconstructed lab used them for substance identification.

Original lab - used for QA/QC, analyzing wells produced prior to 1959 (possibly ~~1956~~ 1952 - 1959)

Drums were never steam cleaned on site; not reused.
Rho-Chem not certified to do EO

Work in three shifts:

4/29/88

1) Afternoon unloaded
2) Evening ~~identified~~ Analyzed/identified/evaluated
3) Emptied into tanks

"Solids" (very viscous/solid drums) shipped to Marine Shale in Arkansas (Esp?)

Solid waste drums ⇒ consolidated residue ~~(Esp)~~ found/remaining in drums (un-pumpable) (Esp) Consolidated material is stored until enough bulk for a shipment to be made.

Storage of non pumpable residue material in South area (?) in 1987/88.

END inside interviews 3:45 pm
2 breaks: 1) 12:30 → 1:30 pm
2) 2:45 observations to 3 pm

4/29/88

Weather. Sunny; 75°+ temperatures
On-Site inspection 4:14 pm

~~North warehouse; distribution~~
Equipment: HNu
Rad-mini
escape capsules
hardhats
APRs available

4 oz sample of waste solvents taken to lab for evaluation

Warehouse; "solid" storage area + sample evaluation area well ventilated

Cement pad within warehouse; some material on wooden pallets also.

Julian Isadore

HEALTH & SAFETY
RHO-CHEM

E & E Job Number FI 1309

Telephone Code Number

Site Name RHO-CHEM
425 ~~14~~ 1s
State/City Inglewood, CA

TDD F9 8804 008
PAN FCA 0805CAA
SSID

Start /Finish Date 6/29/88, 6/29/88

Book 1 of 1

E & E Emergency Response Center – (716) 631-9530

2 6/29/88

Conducted safety meeting at 745.

Julie Dividoni ICF

Sandy Szabat E&E

Chris Lichens E&E

Mary Hourigan E&E

HNU calibrated to 55 span gas 9.5 mini rad

* Ernie Roehl of Rhollem was met at 9:30
* Ken Chiang DOHS to arrive in meeting for RCRA reasons

Rho-Chem need to reapply this fall expansion of facility - sale of co.

* Jim Levy EPA
* Bonnie ~~McMahon~~ O'Meara ? (sp) property owner Chief executive of Rho-Chem joined meeting at 9:30
* Mark Sandoval, Ind. Hygeniest RhoChem
* Chet Early sp? Rho-Chem

Historical information of site/started 12/59

9:20

3

Jim Levy conducted background of RCRA and four stages of the investigation

Superfund waste may someday be sent to this facility so RCRA will want this facility looked at before sending waste to Rho Chem. That is why this is being looked at at this time.

→ reviewing Rho-Chem permit applications

9:30 Am meeting began to be underway with all present

← purchased property ament co. across street, most likely residential area 9951 - 64 distribution of oils & solvents 1964 solvent recycling 72 - stopped oils

MH 6/30/88

4

1951 American Better Chem. - ABC
74 Rho-Chem

67-69 Abco Ind. came into being

* Consolidated ABC & Abco into Rho-Chem in 1974

1964 - Permits for solvent recycling

Atesin still is Delta-style

anything with G-G (Figure 1)
genesol - freon

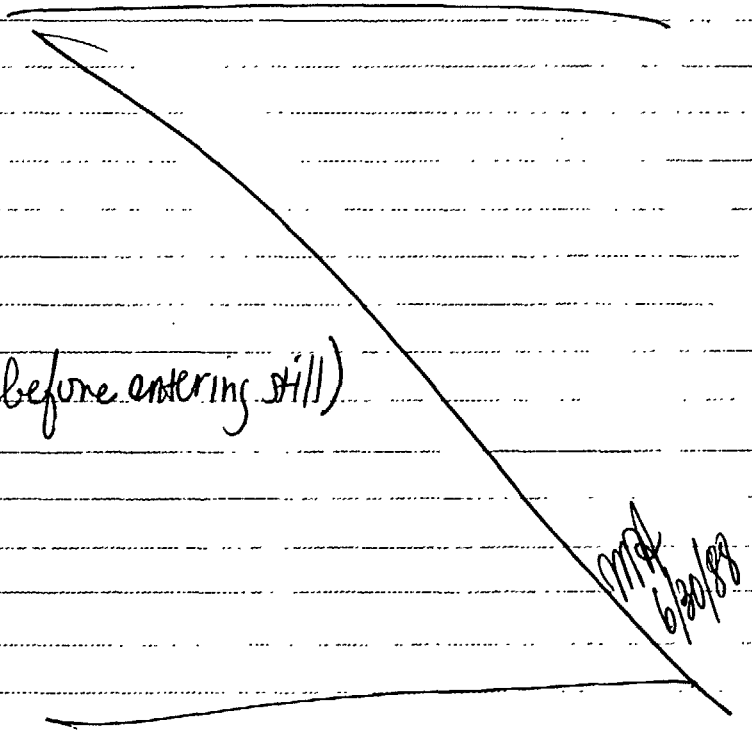
dried through molecular sieves (before entering still)
9-2 - 9-3
4 distillation unit
1st cut through T35
product sold out of tanks G5-G6

5

"Still bottoms" in usual sense weren't a product during the period where freon was used as a final rinse

boil 165°F
111 TCE, TC-TC

1ST CUT - lower boiling material - el.



mrk 6/30/88

6

when drums came in specific gravity of each drum was checked and were stored
1,1,1 TCE } were distinguishable by scent
or PCE }

most customers were (metal parts etc) and used solvents as degreasers

J series -

-34 wash
-35 low-boiler } revised version ~68-69

7

65-67 waste TF

from drums (A5)
to washwash
to dryer

~~Larger reboiler 67-72~~

Feedtank 36?
Flash drum solvent recovery system is same as HOT OIL 1970-72
tank 27 may have been sludge tank

Drive steam unit in before flash unit

L.S. injection #2, 1980-85
just used for chlorinated solvents
not bermed in the beginning installed possibly 82 or 83.

~~Fractionation~~ Column - Surge Column for when the product would foam 6 in column mesh
vapors would pass through

8 Land Disposal Ban Liquids

Chlorinated solvent
BCK shut down 84

thin film evaporator used for chlorinated solvents (flammables)

Tanks were still there but not used

Flammables were sent to BCK to 82

Flammables & chlorinated still bottoms to SIS~~tekh~~ (1984)

9

B

Still bottoms - flammable, waste separated by GC analysis determined

BTU reading

Currently mixing operations takes place in tank (S) 32 (not marked in fig 2

79 was too small (is still used daily)
61 is used
64 to take water off still
to 60 if its good water

MK 6/30/88

77, Moisture & Acid acceptance test

(so material won't breakdown)
a degreaser
a stabilizer may be 1-4 dioxane for 1,1,1 TCA, nitromethane may be added
perchloroeth, stabilizer is butalyne oxide

lots of plumbing and ~~hose~~ hoses are used

Sludge oil container may have been a "typo"
it now contains kerosene

DockFlush - MIXTURE OF ALL SOLVENTS all VIRGIN material - not a waste
when VG tanks are used from
one product to another, to clean the
line there is one big flush

6/30/88
mf

12 6/29/88

400 SITE FACILITY TOUR

E&E members: Chris Lichens
Sandy Szabat
Mary Hovingar
Julie Diordoni (ICF)

HNU calibrated earlier in day, offsite in a residential area roughly five minutes away from RhoClem.

Odors were noticeable near the drum storage area. HNU readings taken downwind on sidewalk gave readings of 2-2.5 ppm. Entered site in level D but all E&E and ICF and Jim Levy EPA carried respirators with us while walking the facility in case we reached above 3ppm. Chris Lichens — minirad

Walk through of facility

No reading above 1ppm HNU in the "solid waste drum storage area" or where the crushed drums

13

weather: warm slight breeze

were stored. This area very well ventillated with to sides of walls open. Readings of 1 ppm was when probe was put in between drums, not in a breathing zone.

Large RhoClem trucks were pumping product into or from tanks in back of facility in area of underground tanks. Very clean trucks and no spillage. HNU did not detect any reading at the hose connections.

Mixing Room where acetone was bottled (and methanol) and stored in cardboard boxes on pallets. No reading HNU

Used empty drum storage area in North West corner of property was cemented and behimed. This is the area where a reading showed close to action level which is

3ppm. Readings now not above 1ppm. Poked probe of HNu around didn't get a reading in drum area. Sandy wants to locate "sump" for rainwater drainage, and is looking in area under drums (Not moving or touching drums).

Odor became evident although no apparent wind change. Stick probe in between drums and it read up to 10ppm. Advised Sandy to not put her nose in between drums to locate this small sump. It was visible from standing.

From here we moved to the above ground large storage tanks made of very thick cement. Climbed over an approximately 6 ft high cement wall (for containing a spill?) by using ladders that were set up.

Very clean. Hoses from drum area have pump hooked up to these

above ground tanks and contents of drum is pumped in no readings on hose connections. Sandy questioned some drainage on side of westernmost tank, about 8 feet up. Response was that somebody was messy when taking a sample.

NE above ground large storage tanks of only clean product had wet near one of the tanks. Appeared orange but was just water(?) runoff from neighbor facility. Small sump in corner of this cement and bermed area did not give a reading on HNu.

Smaller storage tanks and area of stills (in the middle of the facility) did not give any readings.

Chet stirred up water in sump with his hand. (Small sump about 18" by 12") Sandy detected an odor with her nose, but the HNu gave

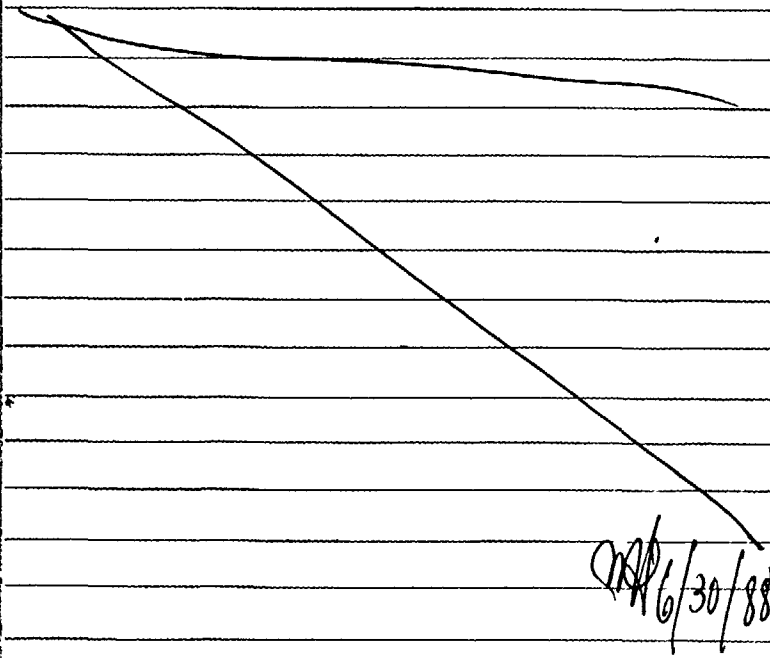
a reading of 1 ppm.

Finished walk through of facility at 6~~00~~ MA pm (1800 hours)

Left site for airport by 6~~15~~ MA (1815)

Photolog kept by Chris Lichens calibration info. I entered in HNU book that is kept w/ HNU

Level D was used entire time.



MAP 6/30/88

Chris

Rho Chem VST, 6/29/88, Ernest Roehl

— Bonnie O'mara (CEO), Mark Sanborn (Env. Manager), Chet Early (employee since 50s)

— RCRA permit expires in 12/88

— Ken Chiang ~~from~~ (DoHS) ~~placed to attend~~

— Kleinfelder concluded that soil contamination was due to spillage over the years. Consequently soil will be remediated & tanks removed. This is confidential info. due to pending sale of Chem

— Solvent distribution & solvent recycling conducted. Solvent distribution will be located & contaminated soil will be removed. Solvent recycling will remain at this location.

(1951-74)

— American Boiler Chemicals = former name. Bonnie owner since 1951 74 ⇒ name changed to Rho Chem.

— Prior to 1951, when property was purchased by O'Mara property was used for residential purposes. Distribution of oils & solvents from 1951-64. Stopped distributing oils in 72. Still distribute solvents. Solvents initially recycled in 64 [illegible]

— Abco Industries owned stills. Stock purchased by Rho Chem in 1974. O'Mara also owned Abco. Abco stated in ~'68

[illegible]

- FCC never got off the ground.

- Solvent recovery system in '64 ⇒ Artison (brand name)

- T-39 => T-47 were above ground tanks. 2000 gal capacity each.

- T-39 - T-47 were AGT's

- Still area was paved but not berned. Roof but no walls. Entire process area was paved since '59

- Process area was level, not sloped

- G-2, G-3 probably. 1000 gal each

- after G-3 went to G-4 (1000 gal) "1st cut" came back to T-35, then out to G-5 or G-6

- TF still bottoms (1,1,1 TCA)

- Still bottoms generated from Artison still. T-27 was water and some still bottoms.

- T-36 used w/ Artison as feed tank to Artison

- T-37 = Still

- T-39 & 40 became T-45 & 46 in ≈'67. At that time T-41 - T-47 were disposed of.

- T-33 through 42 were installed in '67

- Wyl-TCA CFC 113 (separated out through 1st cut) separated through fractionation

- Heresite (Trade name) = Phenolic coating

- Unknown where used tanks were obtained

- Trucks unloaded in Drum yard. Specific gravity determined for each drum. Contents pumped into different tanks.

- Arbon was strictly recirculating unit.

- From water separator top water layer sent to T-27

- T-36 was used as sludge tank

- water softener located next to boiler

- G Series implemented in '68,

↳ 3 30-35' ea glass columns (6" diameter)

- Went from 1 10" column to 3 columns.

- G-2 + G-3 were process holding tanks prior to G-4.

- G-5 not used for contaminated solvents.

- Product went through filter system prior to being pumped to 5 + 55 gallon containers for customers

- 34 was wash tank, 35 => low boils tank

- Waste TF stored in A5, pumped to wash tank (may have been T34 + T35), through dryer. Hose used to pump materials from drum to storage tank. Dedicated overhead piping to wash.

- Larger reboiler => '67-'68

- Abrolene still used until '72 or '73. Remained on-site but was not used.

- Flash drum solvent recovery system. Flash drum contained dirty 1,1,1 TCA + hot oil.

- Live steam unit before flash drum

- Ethane C = trade name for 1,1,1-TCA.

- Settling tank on Rho Chem diagram probably water separator

- No drainage sumps on-site

- Abrothane still ≠ Baron Blakslee

- 1970 = 72 ⇒ Hot oil + tube unit (Flash drums) (unit #1).

- Live steam injection ⇒ 1966-70, not Abrothane still used for chlorinated materials

- Baron Blakslee unit came after Flash unit

- ≈10,000 gallons/year processed currently.

- Delta unit + Baron unit are basicly same "degreaser style."

- Baron unit from 73-75 (guess)

- Probably went to Delta in 75, two Deltas in 78

- Delta + Baron had heating coils, not steam injection

- 2nd live steam injection unit (conversion from electric) was implemented in 1980.

- 1st Delta in 75, 2nd Delta in 78.

- 2nd live steam unit used only for chlorinated solvents. Area formed ~~by 1985 installed~~ in 1982 or '83.

- 6 foot ~~Contact~~ column could be referred to as "surge column." "Foam" is disposed.

- Still bottoms (oil + water) used to be sold.

~~- Thin film evaporator used for chlorinated solvent beginning in~~

- Began sending flammables to Systek when BKK was closed.

- Date of implementation of Thin film = 1981 (Application date). Initially used for flammables. In 1985 began using chlorinated in thin film. Flammables blended w/ chlorinated still bottoms, Transported to Systek (?).

- GC analysis conducted ~~on~~ for each drum. Determined to be chlorinated or non chlorinated.

- Mixing takes place in Tank 34 on drawing #2.

Lunch Break

- 1980 => Figure 5 from PA/SR = very little flammable, non-halogenated wastes were pumped to USTs. Flourinated didn't go to Abadone Still, went to Romic.

(Distilling)

- In 1985 Legan processing TF on-site

- Still receive wastes primarily in 55 gallon drums

- Tank #34 only tank that has ever stored recycled solvents. Held recycled flammables

- Mixing pit filled in ≃1983

- Receiving Tank = has 4 compartments. 1 could be a hexane tank. Used for fractionation cuts currently.

- Water from water separators has some solvents in it. Goes to 61

- Incoming wastes go to 35 or 40.

- 66 receives blend of MC and 111

- Chlorinated solvents go from 30 to 78. If water solubs in it, then water wasted (checked by GC) at 78. Water comes from 60.
- Flourinated solvents from 30 could go to reboiler for further fractionation.

- Water in 60 is initially tap water

- Of 6 solvent surge tanks, 1 currently holds water for washing.

- Water left in water separator goes to 61.

- Stabilizers include ~~1,4 dioxane~~ (1,2 butylene oxide or nitromethane) (for 1,1,1-TCA) 1,2 butylene oxide (for PCE keep product from breaking down.

~~- Reboiler + distillation column~~

- Water with in 76 after been through column

- Washed + dried TF goes to 76.

- Strictly TF wouldn't necessarily go to 67.

- Vent system (vapors) goes through 67 D.

- T13, 14 + 19 used to store wastes after '64, prior to '67. Could have been dirty PCE storage.

~~- Abatare~~

- Underground storages tied into one pump. Dot Flush = mixture of all solvents from flushing pumps.

- Current tanks each have individual fill pipes
- T13 & 14 definitely hold dirty PCE, others maybe.
- No vadose zone monitors ever installed.
- Ribbon mixer/blender (~84-86) used to solidify heavy wastes that could not go to System due to high viscosity. Mixed w/ absorbant (vermiculite) & shipped to Casmalia. Currently disconnected but still exists in drum yard in front of T33. Stored in that area (~30 days) prior to shipment to Casmalia.
- Original lab used for analyzing incoming product only.
- No knowledge of drum steam cleaning
- Maine State Incineration/Destruction

ON-SITE MEETING:

* Ernest Roehl (→ Rho-Chem), Jim Levy (EPA), Julie Dreydoni (ICF), Mary Hourigan, Chris Zachens, Andy Szalay (E-G)
* Bonnie O'Meara – owner of Property a major shareholder

- Co. will be sold to GROW GROUP, a multi-national corp. signing by middle to end of July, 1988.

- He request that we speak only to him about the USTS

2 Biz - ① Solvent Distribution
② Solvent Recycling Facility

* Ernie and Bonnie own the Business

Grow Group plans to construct a tank farm in Long Beach & move solvent distrib biz to the new location & then remove UST's beneath western portion of facility, excavate contaminated soil, repave & expand the solvents recycling operations - new Op. Plan submitted to DOHS.

Jim explains background:

1984 RCRA reauth @ HSWA ammendments - essentially broadened scope of what they could ask for in terms of c/u - Older units (SWMU's). Before permits can

be re-issued, must

1) "Facility Assessment"
2) may lead to "Facility Investigation"
3) "Corrective Measures Study"
   - What are alt. for C/U?
   - What needs to be done.
4) "Corrective Measures Implementation"

Can renew permit with built-in compliance schedule for implementing the corrective action.

- EPA wants them to do complete thorough C/U, so EPA wants to know the complete full extent of the problem prior to Rho-Chem ~~complete~~ beginning any clean-up.

EPA's SF grp. told RCRA group that Rho-Chem might be selected to receive SF waste, so

60/600 RFA's have been completed in Region IX.

4

Assessment is 2 Part Process:

1) File Review & write Prelim Rpt. specifying known past & current SW MUAs.

2) Visual Site Insp. - To verify info found in files and assess current condition of unit. NOT nec. a compliance inspection, though Jim will point out

Use info obtained in Assessment stage to write Final RPT and determine whether or not an investigation is necessary and if so, the extent of the ~~investigation~~ investigation.

Jim informs him to send a written request for the Final RPT

Adj. to Conf Rm

Others join the Mtg:

Mark Sandoval, Env. Manager

Chet Earley - @ R.C. since ~~1958~~ Dec 1951

"Resident Historian"

Yen Ken Chiang - DOHS LA office

① FCC Waste Chemical

Jim Black

History

Bonnie Bought Property 1951 (Then her husband was co-owner)

Trailer Parks and 4 houses

No prior industrial ops here.

- initially involved in solvent distrib & (cutting oils).

- 1964 Began Solvent recycling.

- Co. discont distrib of oils / lubricants in ~1972.

- 1964 - Chet found steam Boiler permit (Opr. rec'd.

1951 - American Better Chemicals

1974 - Δ to Rho-Chem Corporation

~~Solely a sales entity~~

ownership of stills - ABCO Industries
Bonnie owned ↙ Began 1968-1969
67-

FCC never got off the ground.

1st 1964

① Artisan Still

Under Roof. No walls.

Concrete underneath

Paved since 1959 LEVEL - No Slope

overhead piping to 1st RX area

1st chlorinated — in "Artisan" still

1968- Fluorinated

(Final ~~Rinse~~ TF + 111 TCA) Gasoline ~ Freon

water wash = 34

A) Small tank molecular sciver

B) G2-G3 small tanks 1000 ea hold three

C) G4 - still 6" columns

D) 1st cut T - 35

E) Product 5-5 6-6 distill

still Bottoms

111 TCA → Allowed still

@ T39-T42
↳ T36

Artisan Still Bottoms

↓

T36 Feed tank for artisan still

circulating, continue

Fig 2

used Tanks - were sand blasted

45 & 46 were T39 and T40

on

CFC 113 113°F BP — 1st cut to the (fxn) CFC 113
111 TCA 165° F BP
↳ left behind in solution
↳ Chlorinated Artisan

Epoxy
Baked phenolic coating = Hresite
2 western most USTs
5

Bonner Bldgs did plumbing for USTs 33-44
don't recall where used (39-44) came from.

200 gallon batches

111 TCA → id ley odor
Perc → distinct ~~odor diff~~

Sources of Waste - elec industry
odor - pick up from customers ~~originally~~ sold
to customers.
99% metal parts degreasing.
10,000 gallons/year

Artisan - small circ.

ABCO Home Still @ electric / column
111 TCA elec. heater
too hot - ~~out~~ eat the heater
1966 - Put of service shortly thereafter up due to acid by-products.

Late 1960's (68) 111 TCA repl TCE
pulled elec heater out
& repl. @ live steam in
early 80's.

10

Steam Injection Still #1

Ops 1966 - 70

Chlorinated

Same general area

- No Barn

- Feed 36

~~At Cathoone~~

- Steam heated

Di Barron

1973-1975

1 Delta - 1975 — Steam heated

2nd Delta — 1978

Live Steam 1980
inj 2

Conversion of
Abcothane elec. heater repl
w steam - live steam inj.

Romic - fluorinated to Romic
oily party still bottoms in Palo Alto

oil - ~ 1972 re refining
Bottoms Sold to used oil Processors

1984 close
water ⟶ BKK - No ships after 82-83

traces of chl. solvent
~~[illegible]~~ (Land Disposal BAN)

Flammables to Systech as of ~~1984~~
& Abco still bottoms

water → ~~EPC~~ Westside / ~~eastside~~

Receive Flammable
Board @ Okla still
Bottoms → Systech
Lebec, Ca.
since 1984 Kansas
Friday.

Still Bottoms
Flammable
Waste

Sp. gr. & GC analyses
└ @ drum

Halog Flamm

~~Flam~~ ignitable waste

#34

43 is NOW 66

27 is NOW 29

TF distallation resumes 1985
(Stopped from 1972 to 1985)

AC-34 Recycled steam from Thin Film.

In 1985.

WASTES dedicated TANKS: See handout

33-
34 Mixing Still bottoms (29) 38 & 40
35
36
37
38
39
40
41
42

all Above-ground piping, some overhead.

67A, B, C, D

67 1 tank @ 4 compartments used @ hexane for recycling azeotropes

cuts / hexane

Used for cuts,

(Δ 34 to 61)

Chlor. Solvents

From 30 → 78 @ GC ✓ if under sol limit do water wash

Fluor Solvents

From 30 → reboiler

78 @ water from 60 (usually)

TFE - steam jacket (cylinder within a cylinder)

Solvent into top of unit.

Blades in inner cylinder rotate and keep a thin film of waste solvent on the hot surface.

60, 61, 64 = waste
Reso 79.

used water from reading

61 → reboiler → 64 → 60
↓ BTU's

wash water acts → 67 AB CD for carbs
if BTU's high
to push to tank 38

alcohol concentrates in enough column

78

Mainly TF & water thru column

78 → water separates (water on top) → Chlor 1 of 3 dryers

61 ↓

Switch to Read diff between Chlor soln & water (works except for $MeCl_2$)

77
↓ GC
- moisture
"Acid Acceptance test"
(will accept so much acid before it starts breaking down
Stabilizers
↳ Epoxides for 111
Butylene oxide for perc.

77 to column
of: 111 + $MeCl_2$ & want to sep 111 from $MeCl_2$ (sep 1st)

perc 250° B.P.
perc + water 180 B.P.

TF boils 117°F

reboiler/cal — Cleans washwater
— TF from 111 or other higher boilers

if wash TF, → 78
need 111
to +
alcohol

111 in bottom of reboiler
if pure → dirty ethane
if mixed → dirty mixed

TF to 65 → column for redo
for ✓ → 78 wash
GC wash.
(w) ~~10 R/O~~ 111 - TCA saving over
wash dry
76
customer

Stabilizes 1,2-butylene oxide > 111
nitromethane

1,2-butylene oxide
pure

condensate always
↳ 69
BB Black = cutting oil
↓
70

vent System goes thru 67D

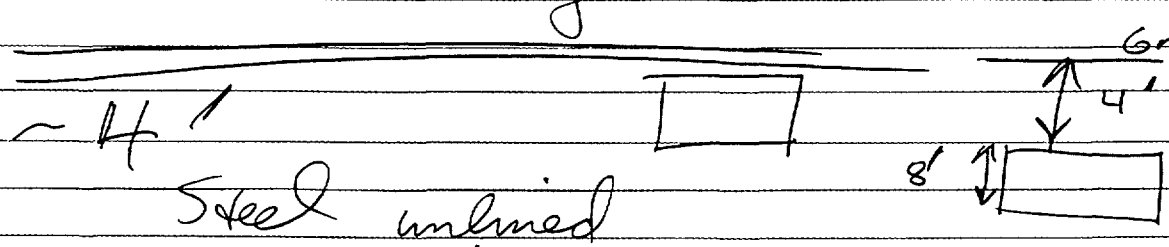
Lost coding work.

moved here in 1952

Residual Solvent Disposal

1952

Initially dealt in industrial
machining oils.



Fill pipe directly above tanks

Tank → Hose → Stills

def 13 14 / maybe 19.

No MONITORS installed

6 Borings 50' Backfill to 20'

LA CNTY Dept of Pub Works

Last December 1987

↳ submit monitor plan

Extension granted.

Surf Seeps 6 Borings

Drums unloaded into
South warehouse
Samples collected for
GC analysis 1gal
— Move Drums to
NE bermed area for pumping
into tanks
use Forklift w
Dual "Barrel Snatch"
Some "Solids" Drums awaiting
shipment
↳ Paints sludges to Marine
Vapor degreaser Shale
metal res in Louisiana
incineration
destruction
non-pumpable residues ?
~~consolidate~~ consolidated in the
bermed area
Accumulate a Truckload
of 80 Drums in
S. warehouse

S. warehouse Jan 1988
bermed.

upgrade tech. grade to
ACS reag grade or
semi-conductor grade.

F

·20

·2W 1-1/2" diam 21 long.
pores 32

Filter tech grade.

Sport Fields go →

Sprinklers in Process.

Both Virg TF

Former TF tank now used for a variety of solvents
Bottling machine area

USTS 13, 14 Borng # 1 a 2

Non-Waste — Rho Solv 1209
Virgin solvent from Shell - aliphatic HC
Napthas.

West warehouse

SITE TOUR

S/M warehouse

Incoming → 5.9 4 Dg sample.

89 drums/day

South Driveway — Sunk ~6"

425 drums

Drums come in as solids & too viscous to pump
↳ per generator

Stacked 3 high

open ✓ to see if full.

if can, pull pump liquid

No check of 5.6 → #38

~50 drums.

(marine shale)

:22

Outside

Drum Crusher

→ cut head off scrap and residue

→ P.F.R. Portable Crusher

3 X every other month

identified 1 Day Turn around

"36 13" = perc & n-butyl alcohol flexography biz.

mo day last digit of yr. # of the drum

0621 8070

directly from drums → TFE

2500 ~~drums~~ gallons

will change TFE.

every other month

April 13th

Casey — Lab Director

Quality Control of incoming/out-going material
& Waste analysis

Empty 4 oz bottles into drums in washer
pump to tanks of mixed chlorinated

1st Stored beneath Hood ~3 days

Sample Bottle Vials → Auto sampler

↓

GC

Waste profile from generator to see if RF will accept waste

GC printouts used to id contents of drums

Vials → Sent in northeast Marine Shale

GCMS

ICP for metals

213-776-6333 2E

in bnd / out bnd
r'd @ GC or IR

GCMS for waste

Recon III Blending reuse ovrg

Hold for mos.

Pour into flam mix - sell
chlor mix - sell
cold
clean

1 Vac truck for waste
Where cleaned?

5 Trucks At
3 hold 60
2 hold 46.

Bomb calorimeter for det BTUs

Shot from @ 40z bottle
↳ for PCB's
e⁻ capture

Shimadzu Gas Chrom.
GC 9AM

3606
↓ ↳ Perc
⇓
waste

2006 Virg Perc
3006 Recyc Perc

~~on~~ S.G. · Shot thru as composite. Sample

Pumping Area Bench
2 diaphragm Pumps

4'x3'x2' Filter tank

Drum → TANK W SCREEN → manual scale

↓

pump out of Bottom

Nylon Window Screen

37 3604 Ethanol

38 3660 Waste

Solids

39 36 ~ V

3670 = Dirty water

Current Cooper Coop cage

Drums to be Crushed

33-44 long

No Post-removal Sampling

Ramwater collection Sump 6" deep 6"-8" wide

→ Pump to MOTH 2

Pipe for sump. 10' long

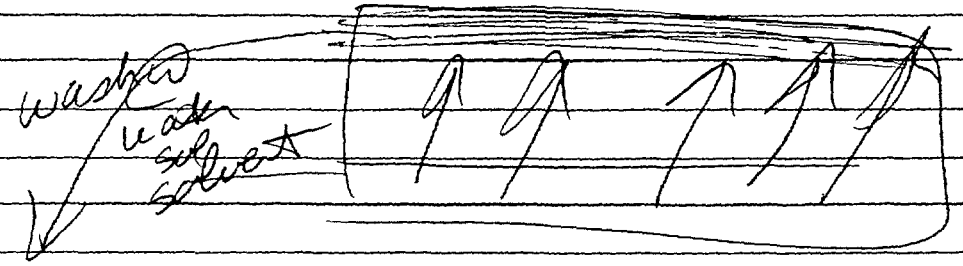
Low Spot Sump

8" deep up to 1 ppm
8 by 18

Batch only

Charge thru Bottom
Draw out remaining high boilers thru bottom

~~water off top of 78~~
Shoot thru Bottom of 78



79 → 61

4'x3'x2' Elevated
Drum → TANK W SCREEN
↳ manual shovel
↓
pump out
of Bottom
Nylon Window Screen

37 3684 Ethanol
38 3660 waste
39 36 ~ V

Solids

3670 = Dirty water

Current Cooper Coop cage.
Drums to be Crushed

33-41 long
No Post-removal Sampling

Ramp → collection Sump
↳ pump to MOTH 2
6" deep
6"-8" wide

Pipe for sump. 10' long

1

628

>24" Thick Concrete Pad

3 layers of 3/4" rebar

Varec Automatic Tank Gauge
↳ 1986

Site Gauge Glasses → Before 1986
5 valves on tank

in & out the Tank Bottom

33 permanent piping
No reason.

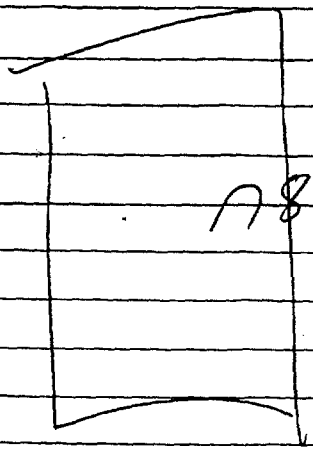
34 old catch tank where flammables were going.

Waste Vac Truck → waste water tank
Solids Marine Shale

Sump NWTF 18" deep
2' X 2'

30

28



APPENDIX G
Lab Analysis of Contents of AGTs 42 and 61

Rho-Chem

Rho-Chem Corp. 425 Isis Ave., P.O. Box 6021, Inglewood, Calif. 90301 (213) 776-6233 Cable RHOCHEM

Mr. Greg Holmes
Hazardous Materials Specialist
State of California - Dept. of Health Services
Toxic Substances Control Division
107 South Broadway
Los Angeles, CA. 90012

December 28, 1987

Subject: Information Per Your Request.

Dear Mr. Holmes,

Attached herewith are copies of the records you requested. These include the following:

1. Water Analysis for our Wastewater storage Tank number 42 (OPC Preliminary analysis checklist) transmitted to Rho-Chem from Oil Process Co.

2. Same as above for Tank number 61 (process tank)

3. Wastewater analysis from Romic Chemical Co. to Rho-Chem.

If you need additional materials, please contact us at our address above as soon as possible.

Sincerely,

Rho-Chem Corporation

Mark R Sandoval

Mark R. Sandoval

m.r.s.
cc:file
attachments

OIL INC., dba
OIL PROCESS CO.
5756 Alba Street • Los Angeles • California 90058
(213) 585-5063

OPC PRELIMINARY ANALYSIS CHECKLIST

Accept Reject

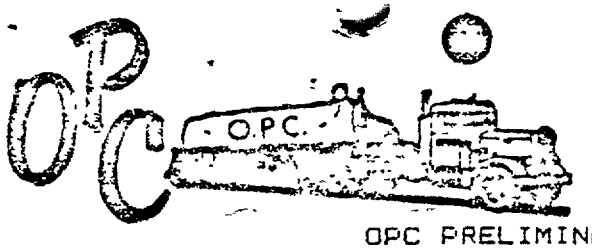
GENERATOR	RHOCHEM		
SAMPLE #	114043	COLLECTOR	ED
PLACE OF COLLECTION	TANK 6		
DATE SAMPLED	11/10/87	TIME SAMPLED	P.M.

	VOLUME		SPOTCHECK
AQUEOUS COMPONENT	100.0	HYDROCARBON COMP 0	SOLID COMPONENT 0

FREE CYANIDE	<0.1	SULFIDES	<0.1
ARSENIC	<0.5	CADMIUM	<0.05
TOTAL CHROME	<0.05	COPPER	0.2
MERCURY	<0.5	NICKEL	0.3
LEAD	<0.5	SILVER	<0.05
ZINC	1.4	FLASH PT(deg F)	91.0
pH(pH units)	7.0	ACETONE	<1.0
METHCHLOR	564.0	MEK	3789.0
DCE	<1.0	TCE	84.0
BENZENE	<1.0	MIBK	23.0
TOLUENE	<1.0	PERC	20.0
IPA	<1.0	ORGANICS	12366.8

TOT ORGANICS	16851.8
ORGANICS w/bp < 80	13651.8
w/bp > 80	3195.0

COMMENTS



OIL INC., dba 797.0
OIL PROCESS CO.
5756 Alba Street • Los Angeles • California 90058
(213) 585-5063

OPC PRELIMINARY ANALYSIS CHECKLIST

Accept Reject

GENERATOR	RHOCHEM		
SAMPLE #	114042	COLLECTOR	ED MCGLOTHLIN
PLACE OF COLLECTION	TANK 42		
DATE SAMPLED	11/10/87	TIME SAMPLED	P.M.

	VOLUME		SPOTCHECK
AQUEOUS COMPONENT	98.0	HYDROCARBON COMP 0	SOLID COMPONENT 2.0

FREE CYANIDE	40.0	SULFIDES	<0.1
ARSENIC	<0.5	CADMIUM	<0.05
TOTAL CHROME	0.4	COPPER	26.3
MERCURY	0.5	NICKEL	2.7
LEAD	<0.5	SILVER	<0.05
ZINC	0.4	FLASH PT(deg F)	119.0
pH(pH units)	7.8	ACETONE	370.0
METHCHLOR	<1.0	MEK	1483.0
DCE	756.0	TCE	797.0
BENZENE	<1.0	MIBK	33.0
TOLUENE	25.0	PERC	231.0
IPA	<1.0	ORGANICS	269.0

TOT ORGANICS		3967
ORGANICS w/bp	< 80	3505.0
	> 80	459.0

COMMENTS OPC IS NOT RESPONSIBLE FOR VARIATION OF RESULTS IN CASES WHERE THE WASTE DOES NOT MAINTAIN ITS CONSISTENCY.
UNITS OF ANALYSIS =mg/L UNLESS OTHERWISE SPECIFIED.

POOR LEGIBILITY

ONE OR MORE PAGES IN THIS DOCUMENT ARE DIFFICULT TO READ
DUE TO THE QUALITY OF THE ORIGINAL